

الزمان الامم

# FINANCIAL TIMES

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Why the U.S. steel barons are anxious, Page 12

Algeria	15	Indonesia	2500	Portugal	15
Argentina	15	Italy	1100	S. Africa	15
Australia	15	Japan	1550	Singapore	15
Canada	15	Jordan	1500	Spain	15
Chad	15	Kuwait	1500	Switzerland	15
Cyprus	15	Lebanon	1500	Taiwan	15
Dominican	15	Libya	1500	Thailand	15
Egypt	15	Malaysia	1500	Turkey	15
France	15	Mexico	1500	U.A.R.	15
Germany	15	Nicaragua	1500	U.S.A.	15
Ghana	15	Peru	1500		
Hong Kong	15	Philippines	1500		
India	15	Saudi Arabia	1500		

## NEWS SUMMARY

GENERAL BUSINESS

### Response to coup divides Caricom

Jamaica has delayed plans to send 250 soldiers to Barbados to join what appears to be a regional military response to last week's coup in Grenada.

The build-up of troops from Barbados and Antigua follows attempts to isolate the new ruling military junta, but Jamaica's change of plan reflects the failure of the meeting of the Caribbean Economic Community at the weekend to agree on joint military intervention.

In Grenada, the 24-hour curfew has been relaxed during the day-time, although few people turned out to work. State radio has been warning of impending invasion by other Caribbean countries. Page 4

In London, Foreign Secretary Sir Geoffrey Howe said Britain and the U.S. were not planning to invade Grenada.

Swiss move right

Switzerland moved slightly to the right in the general election. The right-of-centre FDP was the biggest winner. Page 2

Split in junta

Less than a week before the election, Argentina's ruling military junta is divided over when to hand over power to new civilian authorities. Page 4

'Special' Hong Kong

Chinese Foreign Minister Wu Xueqian said Peking would follow a special administrative policy when it recovered Hong Kong in 1997: "It will remain as it is now, a centre for international trade."

Iranians attack

Iran said its forces launched the second phase of its new offensive, closing around the Iraqi border town of Penjwin. Iraq warned that this would be the last battle of the Gulf War. Page 3

Schluter survives

Danish Premier Poul Schluter survived a threat to his four-party minority coalition Government by winning enough support for some of the main items in the 1984 budget. Page 14

Tamils lose seats

Fourteen MPs in the Tamil United Liberation Front, Sri Lanka's main minority party, lost their seats after boycotting parliament for three months because they would not renounce claims for a separate Tamil state.

Bank chief charged

Lee Hun-Seung, president of South Korea's Choheung Bank, was charged with 28 others in connection with a multi-million dollar scandal involving bribes and illegal withdrawals.

Mass murder trial

Dennis Nilsen, 37, went on trial in London for six murders and two attempted murders. Police say he admitted killing 18 people and cutting up the bodies, some of which they found in drains at his home, but said he would plead diminished responsibility.

Briefly...

Researchers on the Soviet Far East island of Sakhalin spotted Asian grey whales, believed extinct since last century.

Storm hit a Guatemalan electricity tower, blacking out the country for half an hour.

British Airways sought permission to fly Concorde flights between Miami and Washington.

Philippines cancelled the President Marcos golf tournament, to save foreign exchange.

### Apple sharply lower in quarter

APPLE COMPUTER of the U.S. saw fourth-quarter earnings drop sharply from \$18.7m to \$5.1m, or 8 cents a share, but profit for the year was up 25 per cent at \$76.1m. Once last year's earnings were adjusted for stock splits, the company is now facing fierce competition, notably from IBM: the poor quarterly results had been widely expected. Page 14

LONDON: FT Industrial Ordinary index ended 4.5 to 885.3. Gilt were lower in cautious trading, with long falling by up to 1/2. Report, Page 25; FT Share Information Service, Pages 30-31

WALL STREET: Dow Jones index closed up 0.1 at 1,243.98. Report, Page 25; full share listings, Pages 26-28

TOKYO: Nikkei 225 index ended 1,582.16 and the rise in U.S. money supply. Nikkei Dow index fell 5.82 to 9,290.16 and the Stock Exchange index was 5.01 lower at 675.97. Report, Page 25; leading prices, other exchanges, Page 25

DOLLAR improved in London to DM 2.6085 (DM 2.5825), FF 7.955 (FF 7.8825), SwFr 2.1175 (SwFr 2.0895) and Y233.25 (Y232.35). Its trade weighting was 126.3 (125.6). In New York it closed at DM 2.5992, FF 7.935, SwFr 2.111 and Y232.77. Page 35

STERLING fell 25 points to \$1.4995 in London but was otherwise firmer at DM 3.31 (DM 3.38), FF 11.925 (FF 11.85), SwFr 3.1775 (SwFr 3.135) and Y350 (Y349.25). Its Bank of England trade weighting was 53.6 (53.5). In New York it closed at \$1.4941. Page 35

GOLD rose \$2.25 to \$366.125 in London. In Zurich it was up \$1 at \$394.5 and in Frankfurt, up \$1.5 at \$395. In New York the Comex October settlement price was \$398.3. Page 34

SWEDEN is planning new rules for share trading, including making "insider trading" a criminal offence.

ISRAELI bank shares prices fell 17 per cent when trading on Tel Aviv's stock exchange resumed after suspension, but Finance Minister Yigal Cohen-Orag said government intervention had ended the dumping of bank stocks. Page 3

SPERRY, U.S. defence systems and industrial products group, said net second-quarter earnings were \$31.1m or 80 cents a share, up from \$28m, and expects the trend to continue. Page 15

REDPATH Industries, Canadian subsidiary of the UK sugar refiner Tate & Lyle, plans to sell its 50 per cent interest in the loss-making Zymex company of London, Ontario, which makes fructose sweeteners. The purchase is John Labatt, one of Canada's largest brewers, which already owns the other 50 per cent.

SINGER, sewing-machine maker, saw its recovery continue in the third quarter. New income was \$8.8m, a 54.7m loss for a nine-month net profit of \$17.7m, compared with \$380,000. Page 15

EASTMAN KODAK, world's biggest photographic products group, is to shed 800 jobs in Colorado and Rochester, New York, the latest in a series of cost-cutting measures this year.

SEARS ROEBUCK, world's biggest general merchandise retailer group, reported third-quarter earnings up 73 per cent to \$288.6m on revenues 19 per cent higher at \$8.33bn. Page 14

NATIONAL INTERGROUP, parent of National Steel, fourth largest U.S. steel company, achieved a turnaround to net earnings of \$18.2m in the third quarter (\$92.6m loss). Page 15

## Reagan and Mitterrand defend role of troops

BY REGINALD DALE IN WASHINGTON AND ROGER MATTHEWS IN LONDON

PRESIDENT Ronald Reagan said yesterday that U.S. troops must remain in Lebanon to prevent a "tyranny of forces hostile to the West" from threatening the stability of the entire Middle East, including the "vast resource areas of the Arabian peninsula".

The death toll from Sunday's bomb attack on the U.S. marine headquarters in Beirut last night reached 186, with 75 more wounded, some gravely.

French casualties from a similar attack minutes later are at least 23 dead, 35 missing and 15 wounded. President Francois Mitterrand said in Paris last night after visiting Beirut that France intended to keep its forces in Lebanon.

"On the spot I was able to feel the courage and composure of all," Mitterrand said in a two-minute statement.

The foreign ministers of the four countries involved in the multinational peace-keeping force, including Mr George Shultz of the U.S., hope to meet in Europe next weekend, the Italian Prime Minister's office announced. The venue has yet to be decided.

Although Mr Reagan did not name names, the White House made it clear that his references to hostile forces meant the Soviet Union and its Syrian allies.

The President moved swiftly to try to justify the marines' role in Lebanon as public anger mounted over the rising death toll. The figure may eventually exceed any single day's casualty toll in the Vietnam war.

There has been great public anguish in the U.S. over the delay in announcing the names of the dead and informing the bereaved families.

Mr Reagan used a meeting with regional newspaper and broadcast executives to place U.S. policy in Lebanon squarely in the context of efforts to maintain world peace and protect Western interests from Soviet encroachment. He insisted that peace in the Middle East was a

Saddened and confused Americans were asking two main questions yesterday: how could it have been allowed to happen? and what are the marines actually meant to be doing in Beirut anyway? In Congress, Republicans and Democrats demanded a reassessment both of the military role of the U.S. forces in Lebanon and of the overall objectives they were trying to achieve. The identity of those responsible for the Beirut bombings which killed upwards of 200 marines and French paratroopers is a question of obvious importance if the U.S. is to exact retribution. Full answers, however, may be difficult to come by. Since the start of the civil war in Lebanon in 1975 almost every year has produced its crop of political assassinations and devastating explosions against foreign embassies, party headquarters or simply opposing sectarian groups. Details, Page 3; Editorial comment, Page 12.

hipartisan goal shared by all Americans.

A continued U.S. military presence in Lebanon was "essential for American credibility on a global scale," Mr Reagan told the nationally televised session. He repeated that the U.S. could not consider withdrawing its forces while their mission remained unfulfilled.

Equally, Mr Reagan said, the U.S. could not increase the American force to the point at which it became engaged in combat. That would involve fighting with Arab states, "increase the number of targets," and risk starting an overall conflict that could lead to world war, he warned.

Sir Geoffrey Howe, the British Foreign Secretary, told the House of Commons that General Sir Frank Kitson, Commander in Chief of UK Land Forces, was flying to Beirut to review the security of the 97-strong British contingent in the multinational force.

He said Britain had no present intention of changing the size or role of its contingent. But this would be considered in conjunction with the other contributors to the force.

In Italy, the fourth member of the 5,700 member multinational force, the Prime Minister's office said a message had been received from President Reagan suggesting a meeting between the countries contributing troops.

Mr Reagan added yesterday that if General Paul Kelley, the marine commander, proposed sending more troops to fulfil the marines' mission, he would certainly take the recommendation seriously. Gen Kelley flew to Beirut yesterday to examine how the marines' defences could be strengthened.

Mr Reagan said that there was "strong circumstantial evidence" linking the bombing to other recent terrorist acts in Lebanon, such as the bombing of the U.S. embassy in Beirut last April, and that every effort was being made to find the

## New Soviet missiles 'set for Europe'

BY ANTHONY ROBINSON IN LONDON AND LESLIE COLTIT IN BERLIN

THE SOVIET Defence Ministry yesterday announced that it has started preparations for the deployment of new tactical missiles in East Germany and Czechoslovakia.

It described the move as "one of the planned response measures in case new American missiles are sited in Europe." It added: "They are directed at maintaining the equilibrium in the nuclear systems between the Warsaw Pact and Nato."

Confirmation that the Soviet Union has decided to act on its often repeated threat to deploy new weapons is seen as the clearest evidence so far that the Soviet authorities have now given up hope that deployment of U.S. cruise and Pershing 2 missiles could be postponed beyond the Nato deadline of December 1983.

The announcement is presented as a response to planned Nato deployment of intermediate range missiles, but Western defence officials believe it is partly a pretext for carrying out existing plans for the modernisation of Soviet tactical missile forces.

This programme has already resulted in the progressive replacement of the short-range "frog" missiles in East Germany by modern, 75-mile-range SS-21 missiles. About

## Record earnings at GM show strength of upturn

BY TERRY DODSWORTH IN NEW YORK

GENERAL MOTORS, the largest U.S. motor vehicle group, yesterday reported record earnings for the third quarter as a result of strong consumer demand and heavy stock repurchasing. GM reported net profits of \$171m or \$2.33 a share for the period.

The figures, the first from the big U.S. motor companies, underline the continuing strength of the recovery in car sales, although GM's unit shipments, at 1.8m for the quarter, are still lagging well behind the 1.98m recorded in the industry's peak year of 1978.

Sales rose by 23 per cent in the quarter to \$17.6bn, while net profits were up from only \$129m. In the same period of 1978, net profits amounted to \$526m or \$1.84 a share. Despite this recovery in its worldwide figures, Mr Roger Smith,

## White House acts to speed IMF Bill

BY STEWART FLEMING IN WASHINGTON

PRESIDENT Ronald Reagan yesterday sent a letter of thanks to Democratic Congressmen who on August 4 supported the Administration on legislation to provide the International Monetary Fund (IMF) with \$8.4bn - only to be attacked by Republican Party activists for voting to support communism.

The move is an essential first step towards moving the IMF legislation through Congress.

Ever since the National Republican Congressional Committee attacked the Democrats who supported the legislation, the President has been stalled, with the Democratic Party leadership demanding a letter of apology from President Reagan before they would be prepared to support the IMF legislation again.

Passage of the IMF legislation to permit the U.S. to make its contribution to easing the fund's strained

## Jaguar in UK-Japan robot joint venture

By Kenneth Gooding in London

JAGUAR, the UK quality car division of BL, hopes, with the help of a Japanese robot maker and a British company that specialises in advanced automated manufacturing systems, to show the world how robotics can be used in low-volume car manufacturing.

The three-way collaboration - between Jaguar, Daiichi Sykes Robotics, based at Preston, in Lancashire, north-east England, and Japan's Daiichi Kiko - has been given the full backing of the UK Department of Trade and Industry and the Japanese Ministry of International Trade and Industry.

## Economic institutes sharply criticise German strategy

BY JONATHAN CARR IN BONN

THE West German Government's economic strategy came in for unusually sharp criticism in a report issued yesterday by the country's five leading economic research institutes.

At the same time, however, the report forecast a doubling of the economic growth rate next year, to 2 per cent in real terms, with modest inflation and a growing current account surplus.

The institutes complained that there were growing signs that the "surround" in economic policy promised by the centre-right Government amounted to no more than an effort to cut the state deficit.

While that aim was worthwhile in itself, the report said, it should be achieved by a tougher control of spending, not through an increase in taxes and other deductions.

The institutes chided Bonn for allowing an increase in state subsidies next year, for failing to dispense with superfluous regulation and - in some cases - actually increasing bureaucratic obstacles to growth.

Part of this criticism has already been voiced by disappointed businessmen, but the institutes made their points still more trenchantly.

In a first reaction, the Association of German Chambers of Commerce expressed support for the report and warned Bonn that "no more time should be lost".

The Government has repeatedly stressed that it is sharply cutting its borrowing this year and next, thereby relieving pressure on the capital market, while handing up to DM 8bn (\$3bn) in tax breaks to business.

Further, the institutes' own forecasts indicate that West Germany may, on balance, be performing better economically next year than almost all its industrial rivals.

The German real economic growth rate of 2 per cent is likely to be exceeded only by the U.S. (4 per cent) as well as Japan and Canada (3.3 per cent).

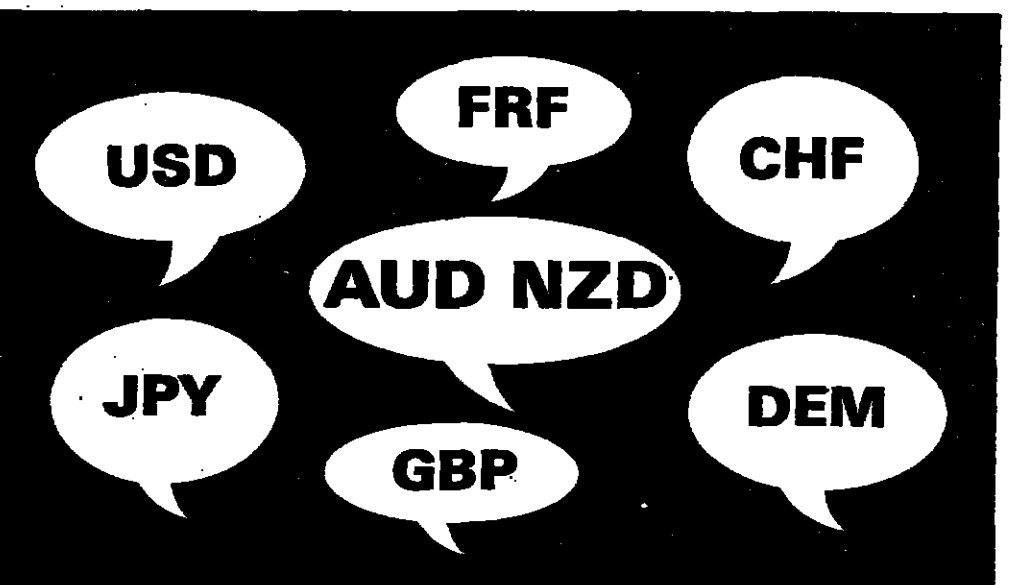
At the same time the West German inflation rate (3 per cent, as this year) should be lower than that of any country apart from Japan and Switzerland (2 per cent) and the Netherlands (2.5 per cent). The West German jobless total is likely to average 2.4m (around 10 per cent of the labour force) after an average 2.3m this year.

The institutes expect West German exports to grow by 6 per cent in nominal terms next year, after less than 1 per cent this year, and the current account surplus to total more than the DM 10bn figure for 1983.

This strong boost to foreign sales has recently been predicted by West German companies themselves, but it remains subject to a big questionmark.

The new report made clear that only about 1 per cent real economic growth could be expected on average in Western Europe - which takes about half of West Germany's exports. In France, which is West Germany's biggest single customer, the economy is expected to stagnate.

The particularly high growth rate countries - like North America and Japan - take a relatively small percentage of West German exports.



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## EUROPEAN NEWS

## SPD unlearns lessons of opposition years

BY JONATHAN CARR IN BONN

A YEAR after losing office, West Germany's Social Democrat Party (SPD) is alienating many of its friends and giving ammunition to its foes.

The party is not just turning its back on the Nato nuclear missiles strategy pressed by its former Chancellor, Herr Helmut Schmidt. It is also undermining some of its own hardest-won achievements of the post-war period. Yet much of the party seems so euphoric about its release from the burden of coalition government that it appears not to notice its self-inflicted wounds.

Naturally, it is the SPD's attitude on the missiles issue which causes most dismay among West Germany's allies. The Republican-led France to the south and the United States to the east are both alarmed by the SPD's growing hostility to the Nato stance.

From the first, the SPD gave the Nato "twin track" (arm and negotiate) missiles decision of December, 1979, only very reluctant support. Herr Schmidt had to fight hard and threaten resignation to keep the party behind him. But, since last October, when Herr Schmidt lost office in a parliamentary no-confidence vote, and especially since March, when the party lost the general election, Social Democrat opposition to the Nato strategy has hardened at breathtaking speed.

One regional SPD organisation after another has come out against deployment. Herr Willy Brandt, the party chairman, took the same stand in a speech to anti-missiles demonstrators in Bonn last Saturday. Herr Egon Bahr, the party's disarmament expert, recommends the West to accept the Soviet Union's latest offer in the Geneva negotiations.

In these circumstances, the congress next month at which the SPD is due formally to decide its attitude on the missiles issue has come to seem superfluous.

Herr Schmidt is expected to repeat at the congress that he considers the "twin track" decision correct and will stick to it (despite his belief that the superpowers wasted too much time before and during the negotiations). He is likely to be supported by a minority of others, including Herr Hans Apel, the former Defence Minister. But the party mood is now heavily against them.

It would be wrong to suggest that the SPD leadership actively pressed the party to oppose deployment. On the contrary, the executive recommended that the issue be kept open until the result of the negotiations is known. But it did so with such evident lack of enthusiasm that it is little wonder its advice has been ignored. The rank-and-file made the running and the "leadership" came floundering in behind.

Herr Brandt must bear much of the responsibility for this gradual breakdown of authority. Few would deny he has shown courage and the best of intentions as a former governing Mayor of Berlin and as Chancellor. But he seems temporarily attracted to ambiguity. "I believe in diversity and hence in doubt," he admitted in his speech on receiving the Nobel Peace Prize in 1971. It is a quality which appeals to many people, but it is clearly a dangerous one for a leader of a great party.

Since the SPD lost power, Herr Brandt has been stressing that "there is a majority to the left" of Chancellor Helmut Kohl's Christian Democratic Union (CDU). This is taken to mean that if the SPD could scoop up those voters now supporting the radical Greens, as

well as disaffected left-wing liberals, it would come riding back to office.

This is a dangerous assumption. In the March general election, the party won 38.2 per cent of the vote and the Greens 5.6 per cent, against 48.8 per cent for the CDU and its Bavarian ally the Christian Social Union (FDP), who had switched from the SPD to support Herr Kohl, won 7 per cent.

In other words, the "majority to the left" did not exist—indeed it was even less available than the figures above imply. For if the SPD had radically adapted its policies to absorb Greens voters, it would certainly have lost more of its traditional middle-of-the-road supporters. The March result simply confirmed a message delivered time and again by West German voters—that elections are won neither on the "left" nor the "right," but in the centre.

It is a message the SPD now seems in grave danger of forgetting, despite its own bitter experience. The Social Democrats were in opposition for 17 years continuously—from 1949 to 1966. For the first 10 years they were not only advocating radical left-wing economic policies but bitterly opposed West German rearmament and Nato membership. For much of

the time they could muster only around 30 per cent of the vote.

Thanks to party strategists like Herr Herbert Wehner, the SPD gradually moved towards the centre and entered government—first with the CDU, later with the FDP. Three Social Democrat defence ministers, Helmut Schmidt, Georg Leber and Hans Apel, did much to reduce the latent tension between the party and the Bundeswehr (the federal armed forces). West Germany was generally seen as a reliable member of the Western alliance, whatever reservations other Nato members sometimes had about the course of Bonn's policies towards the Soviet Union and Eastern Europe.

The party now seems to be drifting back to the bad old days of the 1950s. Herr Brandt argues that rejection of missiles deployment does not mean the SPD is putting Nato membership itself in question.

Herr Wehner, who used to be tight discipline in the parliamentary party, has retired and his successor, Herr Hans Jochen Vogel, is intellectually more able but in practice less effective. Herr Schmidt's health is poor and he is in his last parliamentary term. The new man who can put the SPD back on the right road is not yet in sight.

## Turnout at new low in Swiss elections

By John Wicks in Zurich

SWITZERLAND moved slightly to the right in last weekend's general elections, with losses made by both the Social Democrats and the Communist Party. The biggest winner was the right-of-centre Radical Democratic Party (FDP), with gains of three seats in the States Council (upper house) and at least three in the National Council (lower house).

Despite this, there will be no change in the composition of the Federal Council, the country's seven-member Cabinet. This body, whose members will be elected by a joint session of parliament on December 8, will continue with two ministers each from the FDP, the Social Democratic Party (SP), the Christian Democratic Party (CVP) and one from the similarly right-of-centre Swiss People's Party (SVP).

The surprising feature of Swiss politics is that there are no surprises. The four coalition parties have regularly won more than three-quarters of the total vote since proportional representation was introduced for the National Council 64 years ago.

Initial figures show that they will again occupy nearly 170 of the 200 National Council seats and every single seat in the 44-member States Council.

The stability of Swiss politics has one counter-productive effect. Participation in the poll fell to below the poor level of 45 per cent recorded in 1979 to reach a new low. More and more voters obviously feel that the institution of a "grand coalition" stifles effective parliamentary opposition—but realise that this will hardly change without a massive, and unlikely, growth of support for non-coalition parties.

Within the narrow radius of change at the 1993 elections, the Radical Democrats have reason to feel pleased with their showing. The party, which in recent years has been close to the local "establishment," became the single largest grouping in the lower house, with at least 54 and possibly 58 seats, while improving its Senate contingent from 11 to 14.

## Banco Ambrosiano settlement eludes Vatican-state body

BY JAMES BUXTON IN ROME

THE JOINT commission of the Italian state and the Vatican, set up last December to try to settle the dispute between them over the defunct Banco Ambrosiano, has failed to reach agreement.

The search for a settlement, however, is understood to be continuing and has become if anything more urgent. This is partly because of the pressure from creditor banks of Banco Ambrosiano's Luxembourg subsidiary, Banco Ambrosiano Holding.

The formation of the joint commission was announced last Christmas Eve. It was intended to probe the relationship between the late Sig. Roberto Calvi's Banco Ambrosiano, which crashed with \$1.3bn worth of debts in June, 1982, and Istituto per le Opere di Religione (IOR), the Vatican bank, and to propose a settlement.

Banco Ambrosiano crashed because it could not recover the \$1.3bn lent to obscure companies which the Vatican admits to having owned, albeit unwittingly. IOR, whose chairman is Archbishop Paul Marcinkus, issued letters of patronage on behalf of these companies in September 1981.

The joint commission, composed of three men from each

side, should have completed its work last March. It was hoped that, if there were a settlement, funds handed over by the Vatican to the liquidators of Banco Ambrosiano would be used to pay off the claims of the foreign banks which lent about \$480m to Banco Ambrosiano Holding in Luxembourg.

The liquidators have refused responsibility for these debts, but have already made partial offers of settlement which have been rejected by the creditor banks.

However, the joint commission, which is believed to have presented its draft conclusions to the Italian Foreign Ministry, is reliably understood to be divided. The Vatican representative is upholding the Vatican's line that the Holy See was hoodwinked by Sig. Calvi and had no responsibility for the Ambrosiano crash.

The apparent failure of the joint commission does not mean, however, that the issue is closed.

## Italian deficit

ITALY's current account deficit was \$2,900bn in the first half of this year, according to the Bank of Italy. The amount was incorrectly stated in yesterday's edition.

## West Germany opposes UK insurance move

BY PAUL CHEESERIGHT IN LUXEMBOURG

BRITISH ATTEMPTS to liberalise the European non-life insurance market again ran into stiff opposition from West Germany at a meeting of EEC economy and finance ministers in Luxembourg yesterday.

A draft directive on the insurance market from the European Commission, generally supported by the UK Government, has been stalled in the EEC Council of Ministers since 1978.

Mr Nigel Lawson, the UK Chancellor of the Exchequer, sought but failed to win a political commitment from the other EEC countries on movement towards a more liberal

insurance market. The issue, he said, "had been stuck in the mud for too long."

The West German approach is that freer competition in the insurance market should be confined to industrial and transport risks, leaving the consumer market untouched—a view that does not provide the degree of liberalisation which the UK Government has consistently sought.

West Germany yesterday also opposed the extension in 1994 and 1995 of interest rate subsidies to Ireland and Italy within the framework of the European Monetary System.

## More heat on Polish dissidents

BY CHRISTOPHER BOBINSKI IN WARSAW

WITH ONLY seven days to go before Poland's amnesty for the Solidarity underground runs out, the authorities have stepped up their war of nerves to persuade as many activists as possible to drop clandestine activities.

The main prize for the Government, the four-man Solidarity underground leadership (TKK), seems fated to elude the authorities, as Mr Zbigniew Bujak, the leader in Warsaw, and his colleagues are determined to soldier on in hiding.

The Solidarity leadership has also ignored publicly repeated hints that the authorities could see their way clear to freeing the KOR dissidents, the seven Solidarity leaders awaiting trial, and others of more than 70 still in prison if the TKK were to emerge and cease to play a role.

Under the amnesty, which has run since July 22 anyone in hiding or sympathisers above ground can count on charges not being brought if they report their own activity to the police by the end of the month.

Quite often the police have told people that their clandestine activities are no longer a secret, and then hinted that they should take advantage of the amnesty before they find themselves in prison. Thus, until October 19, 443 people had reported in, 108 of them in the first four weeks, 185 in the second four-week period and 150 in the four

weeks preceding October 19.

The latter figure has no doubt disappointed the authorities who had been expecting the numbers to grow as time ran out.

Now the police can be expected to step up their activities persuading people to turn themselves in to bring up the numbers.

Significantly, yesterday's issue of the Sztandar Młodych youth newspaper ran an interview with an unnamed Interior Ministry official, giving the Christian names and the initials of the surname of 17 students and staff at Warsaw University active in the underground.

Mr Lech Walesa yesterday conferred with senior church officials at the Polish bishops' headquarters in Warsaw for the first time since he received the Nobel Peace Prize earlier this month.

## BMW sees threat of industry-wide strike

BY KENNETH GOODING, MOTOR INDUSTRY CORRESPONDENT

THE WEST GERMAN motor industry is bracing itself to face the first industry-wide strike since before the Second World War, according to Mr Klaus Fleischer, head of export sales for BMW.

He suggested that the West German unions seemed determined to obtain a reduction in the working week from 40 to 35 hours. But industry as a whole was equally determined to resist such a move.

There were indications, Mr Fleischer said, that the motor industry—because of its importance as an exporter—would be selected as a prime target when the unions pressed their case.

The unions want a 35-hour week in all West German manufacturing industry because they believe this

would help to cut unemployment. Talks with the management side of the motor industry are due to start in mid-December.

Mr Fleischer maintained that any interruption to output would be a serious blow for BMW, which had not been able to match demand for its cars for several years. Its output next year was scheduled to rise to between 450,000 and 460,000 from about 420,000 in 1993. Each day of stoppage next year would cost more than 1,800 cars.

BMW was already working above its nominal capacity, he said, and was negotiating with the unions to make Saturday a normal working day instead of one for which overtime was paid.

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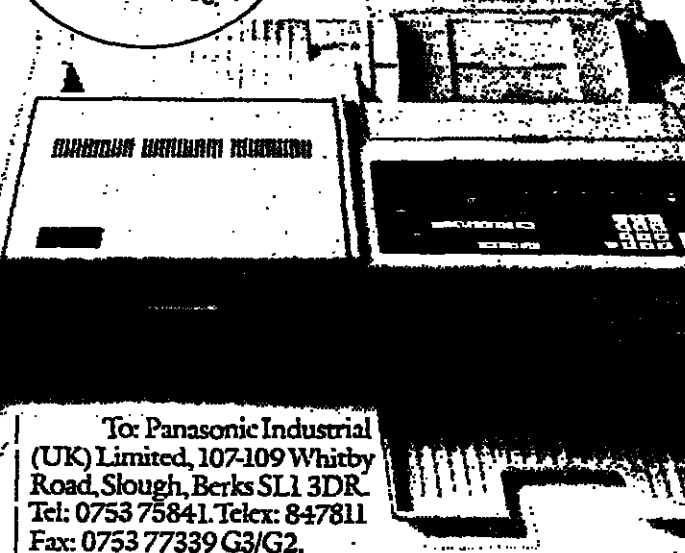
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## CRISIS IN LEBANON

3

Saddened  
Americans  
round on  
ReaganBy Reginald Dale, U.S. Editor  
in Washington

SADDENED AND confused Americans were asking two main questions yesterday: how could it have been allowed to happen, and what are the marines meant to be doing in Beirut?

In Congress, Republicans and Democrats demanded a reassessment both of the military role of the U.S. forces in Lebanon and of their overall objectives.

Unless President Ronald Reagan comes up with some satisfactory answers in the next few days, he will face an outcry from both the public and Capitol Hill legislators, some of whom are already blaming him.

At the most basic level, there is sheer incomprehension as to how a truck loaded with explosives could have forced its way through three guarded barriers to explode in the lobby of the marine headquarters—particularly after security was meant to have been strengthened following the car bomb attack on the U.S. embassy in Beirut on April 18, which killed 63 people.

The U.S. authorities had reportedly warned that similar attacks were likely to recur, and several military experts were asking yesterday why there were no concrete "dragon's teeth" like those used by British forces in Northern Ireland, or even steel spikes, to stop vehicles penetrating the compound.

The repeated response of Mr. Caspar Weinberger, the Defence Secretary, that it is impossible to guard against a suicide attack, is widely seen as inadequate. Senator Edward Kennedy, a member of the Senate Armed Services Committee, has already echoed public sentiment by calling for a committee investigation into what he describes as "an unbelievable breakdown in security."

The concentrated, static marine position at the low-lying airport is obviously exposed and vulnerable—the marines are "living in the bull's eye," in the language of Vietnam.

But only this month Gen. Paul Kelley, the marine commander, who flew to Beirut yesterday, told Congress that the marine corps was satisfied with its geographic position—given that it was dictated by peace-keeping requirements.

Those who opposed the marines' mission in the first place are calling increasingly stridently for them to be withdrawn. But the majority view on Capitol Hill, where even many of Mr. Reagan's opponents are warning against snap decisions

## U.S. determined to find who was behind brutal suicide mission

BY PATRICK COCKBURN

THE IDENTITY of those responsible for the Beirut bombings which killed upwards of 200 U.S. marines and French paratroopers is a question of obvious importance if the U.S. is to extract retribution.

The full answer, however, may be difficult to come by. Since the start of the civil war in Lebanon in 1975 almost every year has produced its crop of political assassinations and devastating explosions against foreign embassies, party headquarters or simply opposing sectarian groups.

In the immediate aftermath of Sunday's attack, Mr. Caspar Weinberger, the U.S. Defence Secretary, said that much of the circumstantial evidence pointed to the Lebanese in Beirut itself. He said that the group most likely to be behind the assassinations is a faction of Amal, the Shia political and military grouping, which is based in the Bekaa valley to the east.

The hitherto unknown Free Islamic Revolutionary Movement, which says that two of its members Abu Mazen and Abu Sijyan drove the explosives-laden trucks to the French and American headquarters, is probably linked to this group. For a year it has been split from main stream Amal, led by Mr. Nabih Berri, which is the most important Shia movement.

Based in Bealbek, so-called "Islamic" Amal is heavily influenced by the Syrians and Iranians.

The U.S. had been slow to appreciate the dangers to its men in Beirut because the most immediate threat to the Lebanese Government and the marines came from the Druze militia and its Syrian backers. The Shia, however, are the largest single sectarian Lebanese group with as many as 1m members out of a total population of under 3m people. They are the poorest group and are heavily concentrated in south Lebanon, the Bekaa valley and south Beirut.

Baraneh, very close to the marines at the airport, that the Shia and Amal have their stronghold. Going into this area of low houses jam-packed together is like entering an entirely different city and a pass is necessary from Mr. Berri's office.

No regular army are allowed into south Beirut and Amal gunmen, often wearing black masks over their faces, man road blocks. There is no doubt of their fanaticism and willingness to die. A middle-aged man, whose son had been killed in a gun battle two days before told me he was joyful his son was dead because of what he had done for the cause.

On calls the most common poster is of Imam Musa Sadr, who disappeared in Libya in 1978. His leadership of Amal was taken over by Mr. Berri, a lawyer who has tried to improve the position of the Shia in Lebanon and not let his movement become the cat-in-the-hat of the Syrian or Iranian forces. But the Iranian example clearly has supporters. There

are posters of Ayatollah Khomeini on the walls, women now often wear the Hejab, the Islamic headscarf, and there is much talk of martyrdom. My guide on a recent visit continually pointed to bullet holes in the walls of buildings, often obviously dating from months before, and said they came from the American Sixth Fleet anchored offshore.

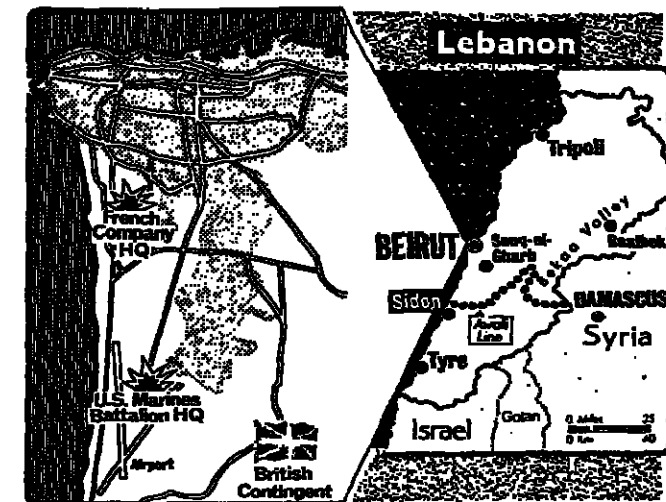
The suicide drivers who crashed their explosives-packed trucks in the American and French bases would not be difficult to recruit in this area. Furthermore Mr. Berri's militia are not a coherent paramilitary force. They are rather a collection of vigilante groups whose loyalties vary from area to area.

Their arms and ammunition have in the past been mainly supplied by Syria but in the battle between the Lebanese army and the Druze Mr. Berri told his men to stay on the sidelines. Government forces have remained out of south Beirut and if they went in now they would risk a split since

a large proportion of the private soldiers in the 34,000-strong army are Shia.

Both the Iranians and Syrians are certainly capable of setting up Sunday's bombings. The Americans believe that they were also behind April's bombing of the U.S. Embassy in the Lebanese capital in which 60 people died, including many key staff members of the Central Intelligence Agency in the Middle East who were holding a meeting in the embassy when the bomb went off.

But explosives are not hard to come by in Beirut and violence is so common in Lebanon that Syrians and Iranians are not necessarily implicated by the circumstantial evidence cited by Mr. Weinberger. Most Lebanese Muslims regard President Amin Gemayel's Government as strongly biased towards the Maronites and kept in business only by U.S. and French support. A small group of Shia could have carried out the bombings by themselves. Nevertheless, the likelihood must remain that the bombing



was done by a faction of Amal strongly under Iranian influence. The problem for the Americans is that the two suicide missions which killed so many U.S. marines and French

paratroopers indicates that who ever carried out the attack is unlikely to be swayed by any form of retribution Washington can devise.

Editorial Comment, Page 16

## Mitterrand shows revulsion at terrorism

BY PAUL BETTS IN PARIS

FRENCH PRESIDENT Francois Mitterrand's one-day visit to Beirut was seen as a spontaneous gesture to show his profound emotion over the weekend massacre, in addition to apparently demonstrating France's continuing support for Lebanese President Amin Gemayel's Government.

President Mitterrand's decision to fly to Beirut is in keeping with the French Socialist leader's characteristic prompt response to major acts of terrorism.

He went to the scene of the shooting massacre inside a Jewish restaurant in Rue des Roisiers in Paris in August 1982 in which six people died, and to Orly where several more people died this year after a bomb planted by Armenian terrorists exploded.

President Mitterrand sent M. Pierre Mauroy, the French Prime Minister, to Beirut after the French Embassy there was attacked in May 1982.

The sudden gesture by President Mitterrand won broad consensus in France. Indeed, former President Giscard d'Estaing was often criticised for not reacting sufficiently promptly and emotionally to tragedies.

President Mitterrand is understood to have decided to fly to Beirut on Sunday shortly after learning of the tragedy. His plans were, however, kept secret for security reasons.

Before the President left early on Monday, M. Charles Hernu, the French Defence Minister, and Gen. Jeanmon Leclerc, the Chief of Staff of the French armed forces, flew to Beirut.

The French political parties have been unanimous in their condemnation of the Beirut



French paratroops guard President Mitterrand as he visits the devastated area

stocky and the French Government yesterday renewed its commitment to maintain the French military presence in Beirut.

Although the French Communist Party repeated its usual terms under the circumstances, its support for the French withdrawal from the Lebanon, the Government sought to present a united front for maintaining the French forces.

France has found its position in the Lebanon increasingly uncomfortable recently but the attack on its forces at the weekend has clearly reinforced its

commitment to maintain its troops there for the time being.

The French Foreign Ministry yesterday also claimed that M. Claude Cheysson, the French Foreign Minister, had been misinterpreted on Sunday when he made an ambiguous remark in Greece suggesting the latest attack could lead some people to worry whether the presence of French troops in Beirut was justified.

M. Cheysson, however, also said "France is not in the habit of giving in to pressure."

Condemning the attack as "a hideous and cowardly act," M

Mauroy said the problem of the return of the French soldiers from Beirut was not under consideration.

Guerrillas loyal to Mr. Yasser Arafat, leader of the Palestine Liberation Organisation, took part in the Beirut attack and gun-fights near two refugee camps in north Lebanon yesterday and Lebanese security officials said there were casualties.

The pro-Arafat news agency, Wafa, said Syrian artillery units shelled the loyalist forces near the village of Bebnine, 10 miles north-east of Tripoli,

Italian  
concern  
continues

By James Euxton in Rome

THERE WAS continuing concern in Italy yesterday over the future of the 2,000 Italian contingent in Lebanon and the proposed sending of a 400-man Italian observer force into the Chouf Mountains.

The inner cabinet of Sig. Bettino Craxi, the Prime Minister, was to meet last night to discuss the Lebanon. Sig. Giovanni Spadolini, the Italian Minister of Defence, has postponed a visit to Beirut in order to attend the meeting.

So far, Italy has avoided major casualties in Lebanon, and it took a less assertive role in the September fighting than the U.S. and French forces.

It was partly because of this that it was considered an acceptable participant in the observer force between Christian and Druze forces in the Chouf, to which Greece had also indicated its readiness to contribute.

But with the situation in Lebanon now uncertain and with anxiety growing at home, the sending of the observer force, which was awaiting formal invitations from all the parties involved and the fulfilment of other conditions, now appears to be in doubt.

Members of the ruling five-party coalition were yesterday expressing more cautious stances on the observer force.

But Italy is unlikely to take a decision on the future of its troops in Lebanon before the proposed meeting of foreign ministers of the four countries which contribute to the peace-keeping force.

Rising death toll of  
the peace-keepers

BY OUR MIDDLE EAST STAFF

THE first attack on the multinational peace-keeping force in Beirut came nearly a year ago when a U.S. marine was slightly wounded by shrapnel from a car bomb.

It was the start of a steadily escalating campaign against the peace-keeping troops which before last Sunday's bomb outrage had cost the U.S. marines seven dead and 60 wounded and the French contingent 18 killed and 34 wounded. The Italian force has escaped more lightly, while the small British contingent of 97 men has yet to suffer casualties.

The American, Italian and French forces originally entered Lebanon to oversee the withdrawal of Palestinian guerrillas from Beirut after the June 1982 invasion by Israel.

After the successful evacuation of the guerrillas in August and despite anxious pleas from leaders of the Palestine Liberation Organisation, the multinational force withdrew. But it was back again after the following the massacre of several hundred Palestinian civilians in the camps at Sabra and Chatila.

The purpose of the force was to provide protection for the civilian population at risk and to give President Gemayel the breathing space he needed to negotiate a withdrawal of all foreign forces from Lebanon, and to allow time for the Lebanese Army to be re-equipped and retrained.

Its total force stands at about 5,700 men, with the French and Italians both contributing just over 2,000, the U.S. 1,200 with another 400 marines standing by offshore, and the British

97. Increased tension in the country resulting from opposition to the Lebanon-Israel withdrawal agreement reached in May this year gradually drew the multinational forces into a more combative role as they were forced to respond to sniping and rocket attacks on their positions.

By September when the Lebanese Army and Druze militias were heavily engaged in the Chouf mountains overlooking Beirut, the intensity of the attacks forced the U.S. and French forces to defend themselves more vigorously. British, U.S. and French jets took successively to the air over the capital and U.S. warships bombarded Druze artillery seeking to force the Lebanese Army to pull out of the key town of Souk al-Gharb.

These actions, particularly by the U.S., provoked accusations that Washington was not attempting a peacekeeping role but was actively siding with the Government of President Gemayel.

The British contingent is stationed in a five-storey disused apartment building at the south-east corner of Beirut. Close by an abandoned tobacco factory, the British position is an excellent observation post for looking up at the first ridge line to the east.

The British mount daily patrols in Ferret armoured cars but their role is limited by their small numbers. They provide guards for the meetings of the military committee overseeing the cease-fire which meets in an abandoned bank building

## OTHER OVERSEAS NEWS

Price of Israeli bank  
shares falls by 17%  
as trading resumes

BY DAVID LENNON IN TEL AVIV

THE PRICE of Israeli bank shares fell by 17 per cent when trading resumed on the Tel Aviv Stock Exchange yesterday after a suspension of more than two weeks.

Combined with the recent devaluation of the shekel, this means that, in dollar terms, the bank's shares have lost more than one third of their value.

The Government limited the fall of the shares of the four major commercial banks to 17 per cent by announcing that this was the price at which it was prepared to buy the U.S.\$140m worth of stock offered for sale. The Government intervention, through the Bank of Israel, is part of the Treasury's rescue plan designed to stave off a collapse of bank shares.

Mr. Yigal Cohen-Orad, the new Finance Minister, expressed delight with the relatively limited amount of stock being sold. He said it indicated that the panic of two weeks ago when there was wholesale dumping of bank stocks and buying of dollars was over.

Like other Treasury officials, he attributed this to the arrangement worked out with the bank whereby the Government undertakes to purchase bank shares held by the public at the end of five years at the rate of 104 per cent of their dollar value on October 3 of this year. Alternatively, the shares can be converted into Government-guaranteed, high-yielding, long-term savings schemes.

All orders for yesterday's trading had to be in by the previous evening to prevent any escalation of selling during the day, which might have led to a collapse of the market which is dominated by the bank shares. There will be no trading today as a national holiday has been declared to enable citizens to

vote in the municipal elections. Not everyone was as certain as the Treasury and bank officials that yesterday's fall in price was the end of the troubles for the bank shares. Some economists gave a warning that the real test may come in a few days when shareholders who have been adopting a wait-and-see attitude may begin unloading shares.

It was also noted that one reason for the limited sales of bank shares yesterday was that the Government and the banks had put heavy pressure on institutional investors not to sell their bank shares.

The public reaction to the fall in share prices was calm, as it had already been known that the shares would fall following the inability of the banks to continue their policy of supporting their shares. It was because they ran out of money to buy their own shares that the banks went to the Government earlier this month to plead for help.

Taking the news from the stock market as a good omen, Mr. Cohen-Orad said yesterday that he believed the new economic programme being pursued by the Government could lead to a halving of the U.S.\$5bn-plus balance of payments deficit within two years. "It is not going to be easy," the Finance Minister said. "It is not just a technical change we are talking about. It is a change which will require a contribution or sacrifice from the broad part of the Israeli population, who will have to reduce their standard of living."

But the optimistic sounds being made by the Finance Minister were not echoed at a meeting of the Knesset Economic Committee

Iran 'in  
fresh  
thrust'  
against Iraq

By Our Middle East Staff

IRAN said yesterday that it had launched a fresh thrust in its five-day offensive against Iraq in the northern border region of the battlefield. The target, Iranian troops appear to be the Iraqi force of Penjwin in the Kurdish mountains.

Penjwin is east of the Iraqi oil centre at Kirkuk which was repeatedly bombed by the Iranian air force at the start of the war over three years ago.

Arab diplomats had predicted before the start of the latest Iranian attack that Iran might seek to threaten Iraq's remaining oil export pipeline in retaliation for the delivery to Iraq of French Super-Etendard aircraft equipped with Exocet missiles.

The Iraqi pipeline runs from the eastern oilfields through Turkey to the Mediterranean and has a capacity of about 700,000 barrels a day.

Iran claimed that its forces were advancing to the south, east, and north of Penjwin, but Iraq said that it would crush the invading forces and predicted that this would be the last battle of the war.

Both sides said that many hundreds of enemy troops had been killed in the latest fighting. Iran put total Iraqi casualties at over 4,000.

Iraqi diplomats said two weeks ago that they were expecting another Iranian offensive and warned that they would retaliate with all the means at their disposal. The weekend Baghdad radio reported that the Iranian port of Bandar Khomeini at the northern end of the Gulf had been mined, but there has been no independent confirmation of this.

## Sino-Soviet frontier may reopen

BY MARK BAKER, RECENTLY IN URMUMQI, NORTH-WEST CHINA

CHINA and the Soviet Union are negotiating to reopen their frontier in Central Asia to the first direct trade and exchanges between families there in 21 years.

The border, which stretches for 3,000 kms along the western flank of China's largest province, Xinjiang, has been closed since 1962 when the two Communist nations broke off relations after wars over ideology.

The mountainous frontier, which begins in the Pamir ranges at the edge of Afghanistan—the so-called Roof of the World—is now guarded by hundreds of thousands of troops on either side. Virtually the only crossings are by stray goats and the occasional spy.

The closure has divided several races of people as effectively as the Berlin Wall. For thousands of Uyghurs, Kazaks, Kirgiz and Tajiks whose nationalities and traditional lands straddle the border, it has meant separation of families and close friends.

Chinese foreign ministry officials in Urumqi now say, however, negotiations are under way in Moscow that may soon lead to a resumption of exchanges between relatives and state-level trade across the frontier.

China has already made extensive preparations in anticipation of an agreement to reopen the border in Central Asia at two posts which were important trade routes during the 1950s — at Turgeat, near Kashgar in southern Xinjiang, and at Korgas, west of Urumqi.

Roads to the two crossing points have been upgraded, new storehouses and other buildings have been built and existing equipment has been repaired.

It is expected that Xinjiang will become an important channel for barter trade between the two governments, the target for which has been increased this year by about 170 per cent to \$800m.

Fruit and long-staple cotton are expected to be the main exports from Xinjiang, while glass and coffee are expected to be the main imports to come from the Soviet Union. China has ruled out an early resumption of local border trade, but more significant, at least for the local people, is the prospect of a resumption of exchange visits between the minority nationalities.



"It may be that there will be some changes on visits between relatives when the new regime is agreed," said Mr. Li Qishun, a Foreign Ministry spokesman. "There is a possibility of resumed border trade, and it is possible there will be some direct contact between relatives."

Li said any new agreement hinged on the Soviet Union's giving concessions to the broader Sino-Soviet consultations under way in Peking to explore ways to heal the rift between the two countries.

China has already made extensive preparations in anti-

border issue as being central to the improvement of overall Sino-Indian relations, there are many hurdles to cross. The Chinese are known to want what they call a "package" deal which would virtually legalise the position as it is now. That is, they want India to recognise that Northern Ladakh is part of China in return for recognising Arunachal Pradesh as an integral part of India.

India, however, wants each sector to be discussed separately, since it is convinced that it can demonstrate that its case on Northern Ladakh and Arunachal is sound.

India has told the Chinese that, although both countries seem to want normalisation, China must recognise that national interests and strong national sentiments were involved in any exercise to resolve the boundary question and that this was the most immediate issue.

Li says that despite a build-up in Soviet forces in the area, tension along the border has eased over the past two years. But he says meetings at the border posts can still occur as often as several times a week.

## India tells China border issue is crucial

BY K. K. SHARMA IN NEW DELHI

INDIA yesterday bluntly told China that improvement of relations between the two countries would not be possible unless they resolved the border issue over which they went to war in 1962.

The warning came as the two sides met for the fourth time in three years in another bid to normalise relations, which have been noticeably cool for the past two decades ever since the two countries fought a bitter and

inconclusive war over their Himalayan border in northern and eastern India.

Trade and cultural links were resumed four years ago, but further progressive has been meagre.

India claims that Chinese troops illegally occupy more than 14,000 square miles of its territory in the Ladakh province of Kashmir state, while China claims Arunachal Pradesh in northeast India as its territory. Although India regards the

border issue as being central to the improvement of overall Sino-Indian relations, there are many hurdles to cross. The Chinese are known to want what they call a "package" deal which would virtually legalise the position as it is now. That is, they want India to recognise that Northern Ladakh is part of China in return for recognising Arunachal Pradesh as an integral part of India.

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Japanese  
vehicle  
production  
up 39%

TOKYO — Japanese vehicle

production rose by 39.2 per cent to a rounded 1.01m units in September from August and was up four per cent from a year earlier, 355,100 trucks, up 6 per cent and 4,400 buses, down 17.8 per cent.

This was the fifth consecutive month of a year-on-year increase, the result of increasing domestic and export sales, it noted.

The September total comprised 647,500 cars, up 6 per cent from a year earlier, 355,100 trucks, up 6 per cent and 4,400 buses, down 17.8 per cent.

Talks soon on Punjab

INDIA'S Home Minister, Mr. P. C. Sethi, yesterday told MPs that he would soon invite Mr. Harchand Singh Longowal, president of the Akali party of Sikhs, for talks aimed at settling the problems in the Punjab, writes K. K. Sharma in New Delhi.

Punjab has been put under direct rule from New Delhi following murders of Hindus and adoption of terrorist tactics by Sikh extremists

French team evacuated

Several French technicians and their families have been evacuated from a cement factory project in south-east Burma following the kidnapping of a French couple by guerrillas, it was disclosed yesterday.

The Karenni National Union (KNU), a right-wing secessionist group, has claimed responsibility for the kidnapping. Reuters reports from Rangoon.



## AMERICAN NEWS

# Nicaragua forced to save fuel after guerrilla attacks

BY TIM COONE IN MANAGUA

THE Nicaraguan Government has announced emergency measures to cut fuel and electricity consumption following an escalation of sabotage attacks directed at key economic targets by right-wing U.S.-backed guerrillas.

From November 1 the working week will be cut to five days from five and a half, street lighting switched off at midnight, air-conditioning in public offices reduced, and cuts made in diesel and petrol consumption by Government vehicles.

The petrol rations for private vehicles will be cut by two gallons a month, from 20 gallons a month for cars, and 12 gallons

a month for motor-cycles. The taxi ration will be cut by 1 gallon a day from 5 gallons.

Nicaragua imports all its fuel requirements of 4.6m barrels per year from Mexico. Attacks on storage and unloading facilities at the ports of Corinto and Puerto Sandino recently came close to seriously disrupting supplies. This, coupled with guerrilla threats to attack Mexican tankers bringing oil to Nicaragua, pushed up freight rates for a 120,000 barrel load from US\$890,000 to over US\$950,000. Some ship brokers have been giving quotes of up to US\$980,000, according to officials of Petronic, the Nicaraguan state oil company.

The Government warned at the weekend that it may have to evacuate the entire 25,000 population of Corinto to protect them from further attacks. Fire fighting experts said that if the attack which destroyed 2m gallons of diesel fuel had hit gasoline and aviation fuel tanks the entire port and most of the neighbouring town would have been destroyed.

Meanwhile an air attack on the new 35 MW geothermal electricity plant of Momotombo, located 40 km north-west of the capital, was repelled by anti-aircraft fire on Friday night, according to the Government.

argument that an excessively lengthy transition period could prove a further destabilising factor in an already volatile political situation.

Some Air Force officers are worried apparently by the sweeping military reforms and the airing of the human rights question being promised by the radical party and to a lesser extent the Peronists.

In a rally on the outskirts of Buenos Aires on Sunday night, Sr Raúl Alfonsín, the radical presidential candidate, said that he would take all the measures he felt necessary to put the armed forces firmly under the control of his government if elected. The radicals are proposing significant cuts in defence expenditure, a scrapping of military service and a major shake-up of the internal intelligence services.

Recent opinion polls are showing that the radicals are close to upsetting the political hegemony of the Peronists, although campaigning this week will have an impact on huge rallies both major parties are planning for Buenos Aires this Sunday as a test of public support.

In a related development over the weekend, Sr Augusto Comte, a human rights lawyer and candidate for the small Christian Democrat Party, drew thousands of supporters to the capital's Plaza de Mayo.

The Air Force, which has taken a strongly nationalist line on the debt question, wants the parties to be brought in as soon as possible into talks with Argentina's foreign creditors to demand easier terms. Without awaiting a final decision from the junta the Air Force is believed to have already advised all its members to withdraw from diplomatic and administrative posts within 30 days of polling day on October 30.

The Army high command, however, would like more time to negotiate with the incoming government on some key aspects of its programme. It has yet to be won over to the

## Caricom disagrees on Grenada task force

By Carole James in Kingston

LEADERS of the Caribbean Economic Community have failed to agree on joint military intervention in the troubled Eastern Caribbean island of Grenada following last week's military coup there.

As a result, Jamaica, which supports intervention, has delayed plans to send 250 soldiers to join forces gathered in Barbados in preparation for a possible military response to events on the island if agreement is eventually achieved.

The build-up of soldiers from Barbados and Antigua follows increasing efforts to isolate Grenada's military junta, which took power after the army executed Mr Maurice Bishop, the Prime Minister, and several of his cabinet ministers.

In addition to Jamaica, intervention was supported by Barbados and the Windward Islands. It was rejected by the Bahamas, Belize, Guyana and Trinidad and Tobago.

The Caricom leaders meeting in Trinidad over the weekend agreed, however, to cut off scheduled air and sea links until the junta gave an undertaking to return the country to civilian rule. The leaders said they would refrain from dealing with the revolutionary military council in Grenada headed by General Hudson Austin and instead use as their point of contact the Head of State, Governor General Paul Scoon.

Meanwhile, Grenada's military leaders yesterday morning lifted partially a curfew imposed after the coup but reports from the island said there was very little activity on the streets and that this was mostly military.

Schools remained closed as were most stores and privately owned businesses. In government offices there was a high level of absenteeism, reports said.

Charter flights were going into Grenada today to evacuate foreigners, mainly tourists, who have been stranded there by the effects of the curfew and the ban on scheduled flights.

Caribbean obligations are a useful lever, Robert Graham reports

## Britain plays its Belize card

THE DESPATCH of the British destroyer HMS Antrim, accompanied by a support tanker, to stand off the troubled former colony of Grenada has highlighted Britain's continued residual interest in the Caribbean.

Although the decolonisation process is virtually complete, strong obligations remain in the area — nowhere more so than in Belize on the Central American continent with a strategic Caribbean coastline.

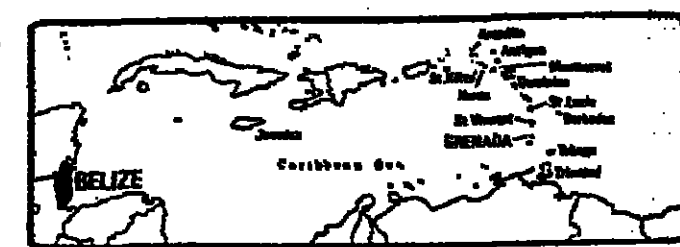
Britain currently has a garrison of 1,600 troops and airmen in this former colony. It is not widely known that this is the largest permanent military presence of an external military power in Central America.

Four Harriers, helicopters and RAF support personnel plus army units are there by agreement with the Belize Government, staying on after this nation of 150,000 inhabitants gained independence in 1981.

The commitment, at least in public, is an open-ended one, despite recent reports that the British Prime Minister, Mrs Margaret Thatcher, is anxious to pull them back soon. There has been evidence that policy has changed. Both the Belize Government and Britain recognise that the military presence is a potential embarrassment and has little long-term relevance to Britain's defence or diplomatic needs in the region.

The question all along has been only when it was appropriate to withdraw.

The principal reason for the presence of the British garrison is Guatemala's claim to a large chunk of Belize's coast line. Guatemala has never recognised independent Belize and from time to time has made war-like



moves, such as mobilising forces on the border. British diplomats have little doubt that the British military presence has served as a deterrent.

Although Britain has no diplomatic relations with Guatemala, only a representative of British interests in the Swiss Embassy, the Guatemalan authorities have recently become more friendly, and a reasonable working relationship has been established with the right-wing military regime in Guatemala.

This stems from the fact that British troops have been actively co-operating with Guatemala in patrolling the border and monitoring the Belize coastline to prevent infiltration by left-wing guerrilla movements and impede a Guatemalan supply of weapons from Cuba.

As guerrilla activity inside Guatemala continues, the authorities there have come to place considerable reliance on British co-operation. Thus, far from exerting pressure on the British forces to leave, the Guatemalans are keen that they should stay — or, at second best, that they should be replaced by U.S. troops. The U.S. Administration, for its part, is reluctant to contemplate a military

presence in Belize and agrees with Guatemala on the need for Britain to say so.

So while the original reason for the British presence has faded the pressures from other interested parties for Britain to stay on have grown. This has provoked suggestions that Mrs Thatcher has taken advantage of her leverage to ensure the U.S. holds back from significant rearmament of Argentina. While any sort of blackmail is denied by British officials, the British undoubtedly have made the point that Britain is doing the U.S. and its allies a favour in Central America and expects recognition in the way the U.S. behaves over Argentina and the Falklands.

Behind all this is an unpublished debate within the Government over Britain's policy towards Central America. The big military commitment in Belize contrasts starkly with the paucity of British diplomatic representation in Central America.

Britain has no permanent representative in El Salvador or Nicaragua, the two principal areas of current tension. A small embassy in Honduras deals with El Salvador while one in Costa Rica handles

Nicaragua. This is recognised by the Foreign Office as unsatisfactory. Britain relying very much on U.S. assessments and information on these two countries. Of all members of the EEC, Britain agrees most closely with U.S. Central American policy.

An inspection team from the Foreign Office recently toured the region and is understood to have favoured introducing a British diplomatic presence in both El Salvador and Nicaragua, with the latter a priority. A decision in early summer was reportedly shelved because of Mrs Thatcher's reluctance to be associated with a gesture which the left-wing Sandinista government might exploit as a sign of British friendship. It was then decided that if a move was to be made it had to coincide with the opening of an embassy in war-torn El Salvador. Since then arguments over funds and budget restraint have stalled a decision.

The potential destabilising effect of a British pullout from the region is implicitly recognised by other states there, in particular the Costa Rican group, which is trying to mediate in El Salvador and Nicaragua. This group, comprising Costa Rica, Mexico, Panama and Venezuela — has produced a peace formula calling for the withdrawal of all foreign troops and advisers from the region.

But it has made no mention of Britain and Belize, and the group's public statements appear mainly aimed at the Cuban military advisers in Nicaragua, Americans and Argentines in Honduras and Americans in El Salvador.

## Chile seeks to ease IMF accord terms

BY MARY HELEN SPOONER IN SANTIAGO

A TEAM from the International Monetary Fund has arrived in Santiago to examine Chile's request for further credit and an easing of the budgetary deficit restrictions contained in its IMF accord.

The accord, signed earlier this year, provides for a maximum budget deficit of 2.3 per cent of Chile's gross national product. Chile is seeking to increase this limit to 5 or 6 per cent next year in order to stimulate economic growth through increased government spending.

The IMF delegation is also

expected to discuss the issue of Chile's three-tier exchange rate. The official rate is hovering around 84 pesos to the U.S. dollar, while the legal parallel market rate is around 93 pesos to the dollar and the central bank rate for dollar debt repayment is 70. The IMF is thought to favour a unified exchange rate, or having the Chilean government count the spread between the parallel market and the official rate as a subsidy.

The IMF visit occurs at a time of considerable discord within the regime's economic

team over whether to abandon the free market models, followed since the mid-1970's. A fortnight ago the Finance Minister, Sr Carlos Caceres, who has come under increasing criticism, offered to resign but was reappointed by General Pinochet.

Chile's budget director, Sr Martin Costabal, central bank vice-president Sr Daniel Tapia and the assistant director of the state Planning Ministry and the president of Chile's securities and exchange superintendency are also reported to have offered their resignations.

## Uruguay groups step-up protest

URUGUAY'S opposition groups at the weekend expanded their campaign for change in the military government's economic programme and an early return to democratic rule, writes our Foreign Staff.

In Montevideo, where over half of the country's 2.7m inhabitants live, thousands of protesters took to the streets banging empty pots and chanting anti-government slogans after a symbolic half-hour black-out had left the bulk of the city's residential area in darkness. This was the third monthly "day of national protest" to be staged this year.

## Brazilian contractor seeks \$200m war damages from Iraq

BY ANDREW WHITLEY IN SALVADOR, BRAZIL

MENDES JUNIOR, the leading Brazilian international contractor, has submitted a claim for \$200m (£138m) in war damages to the Iraqi Government.

The company said the claim was in respect of additional costs it had incurred while building a \$1.2bn railway line in Northern Iraq, as a result of the three-year war with Iran.

Sr Munilio Valle Mendes, president of Mendes Junior International, began talks with the Iraqi authorities in Baghdad this weekend. The Brazilian contractor is a strong favourite to win another major contract in Iraq, worth \$2.6bn, in a joint venture with Hyundai of South Korea.

However, company officials said here they felt the project, to build a double-track line between Baghdad and Basra, Iraq's main commercial port at the head of the Gulf, was unlikely to go ahead until the war ends. Basra has been out of action since 1980, when it was heavily bombed by Iranian war planes.

When the war broke out,

Mendes Junior was compelled to switch its supply routes for the impact of cement, railway lines, locomotives and rolling stock from Basra to Jordan or Kuwait.

A new office had to be established in Jordan and a fleet of articulated trucks bought to handle the transport of materials and equipment across the desert to Iraq.

Construtora Mendes Junior, the parent company, has ceremonially inaugurated the first stage of a \$400m oil platform destined for the Pampo oil field in Brazil's Campos basin.

The 11,800-tonne steel jacket is the last in a series of seven ordered by Petrobras, the Brazilian state oil company. Work on the deck and modules is placed on top of the \$140m jacket. It will be finished by the end of the year. Foreign orders are being sought in West Africa, Angola and Argentina, and the company hopes to win at least one of the two platform contracts Petrobras is expected to let in 1984.

## Thais offer Japanese 40% stake in LNG scheme

BY ANDREW WHITLEY IN SALVADOR, BRAZIL

JAPAN'S Mitsubishi Corporation and a consortium of Mitsui and Co., Sumitomo Corporation and Marubeni Corporation have been offered the entire 40 per cent foreign equity planned for Thailand's liquefied natural gas (LNG) export project, Mr Sivavong Chankasiri, head of Thailand's Mineral Resources Department, said yesterday.

The offer was made during a meeting between the Japanese companies and a Thai-LNG company, a wholly-owned Thai company appointed by the Government to handle the production and export of LNG from the Gulf of Thailand.

The Thai company, which will hold 60 per cent of the equity in the \$3bn project, is 25 per cent government owned. Thailand expects to start exporting LNG by 1990.

Exports committee Japan's International Trade and Industry Ministry has set up a committee to monitor exports of Japanese goods. Reuters reports from Tokyo.

It is part of the Government's economic package, announced last Friday, to stimulate the domestic economy and reduce the trade surplus, expected to rise to about \$30bn in the year ending next March.

New cars 'ceiling' Japan will tell Mr William Brock, U.S. trade representative, the new ceiling on Japanese car exports to the U.S. for 1984 when he arrives later this month. Reuters reports from Tokyo.

Trade and Industry Ministry officials said Japan cannot agree to a U.S. request for a ceiling of 1.8m cars.

European Community officials said yesterday that the effects of Japan's latest economic measures on cutting Tokyo's trade deficit with the EEC will be less than the \$200m originally estimated, AP reports from Brussels.

EEC officials gave the \$200m figure as an initial reaction to Tokyo's latest economic package, which includes plans to lower import tariffs on more than 40 items.

## Airlines battle to clear the doldrums

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

THE WORLD'S airline industry leaders are meeting in New Delhi this week amid signs of an improvement in their financial fortunes, but they are deeply aware that they still have a long way to go before they are out of the recession that has hit them hard since 1979.

To the end of this year, the cumulative losses of the 124-member airlines of the International Air Transport Association (IATA) will have amounted to about \$7.1bn (\$4.6bn). This year's overall loss, after meeting interest payments on fleet and other re-equipment programmes, will amount to about \$1.2bn, with further losses forecast of \$750m in 1984 and \$250m in 1985.

Severe cost-cutting exercises, which have reduced staffs, replaced managements, cut routes, reduced aircraft fleets and eliminated unwanted assets such as hotels and even office buildings, have meant that most of the airlines have managed to survive, and are now much leaner and tougher than they were.

Airlines that have come through this exercise include Air-India, British Airways, El Al of Israel and Pan American, to name only a few. Virtually every airline in the world has been obliged to trim itself to meet the financial problems generated by soaring costs (particularly fuel and interest

charges) at a time of declining, or at best stagnant, traffic.

The result of what Mr Knut Hammarhjeld, director-general of the IATA, calls "rigorous cost discipline" has been the industry's overall cash results.

These show that after severe losses on direct operating charges (that is, before interest charges) incurred between 1980 and 1982, a small operating profit of about \$500m, on total revenues of \$38.35bn, is forecast for 1983. This could rise in 1984 to an operating profit of \$1.1bn, and further to \$1.65bn in 1985.

What is really keeping the airlines in severe financial difficulties, however, is the rising volume of interest payments on fleet re-equipment.

These interest debts began to soar in the late 1970s, as the airlines began to order new-generation equipment, such as Boeing 767s, 737s and European A-300 and A-310 Airbus, which are only now coming into service.

From about \$500m a year in the late 1970s, these interest charges jumped to \$550m a year in 1980, and since then have climbed to an estimated \$1.7bn this year, with further rises to \$1.85bn forecast for next year and to \$1.95bn in 1985.

The exact figure has been the direct savings arising from the "rigorous cost discipline"

undoubtedly already has been swallowed up in a rising tide of interest charges.

Having, in many cases, already cut their staffs and operations back so severely that there is now little room for further cuts to help meet the interest burden, the airlines are having to look at other measures to help them out of their financial dilemma.

One move has been to slow down on re-equipment programmes. Many airlines have either cancelled or delayed investment in new jet airliners worth over \$1.1bn.

Last year's total of new jets ordered—233 aircraft worth about \$5.35bn—was well down on the previous year's figure of 382, and the figure for 1983 is likely to be below the 150 aircraft level.

This has forced the major manufacturers to slow down production programmes, and has led to an intensification of the battle for orders in the

victims of any type of political or military design."

Mrs Gandhi made no direct mention of last month's shooting-down of a South Korean airliner with the loss of 269 lives, by a Soviet fighter, but delegates are expected to discuss the disaster as well as the strengthening of anti-hijacking measures.

The airlines desperately need an improvement in traffic, bringing bigger revenue yields and some profits, before they can reasonably feel that they are out of the financial mire.

Mr Hammarhjeld has said that, during the 1980s, the new capital requirements of the airlines for fleet re-equipment is at least \$50bn, and this could double to \$100bn if traffic starts to increase, generating a new demand for more aircraft.

To meet that kind of capital requirement, on top of being able to meet the continuing interest charges on existing loans, will require, according to Mr Hammarhjeld, a minimum annual profit of not less than 7.5 per cent of revenues — and the airlines are nowhere near that situation.

To achieve it, they need to do several things. First, to continue their stringent cost-cutting exercises wherever they can.

Secondly, to eliminate the big losses they incur from such things as "demonstrations" — selling tickets worldwide at less than their true value (which costs them over \$1bn a year in lost revenues).

Third, they must try to encourage foreign governments to release "blocked earnings" — money legitimately earned from the sale of tickets in overseas countries (especially in Africa) which the governments of those countries refuse to allow them to repatriate to the airlines' home countries. This costs the airlines about \$1bn a year.

Finally, they must increase fares. Despite consumerist and government pressures for cheaper fares, the widespread belief in the airline industry is that the time has come when it is now one of the best ways in the world, and that some rises in fares are not only desirable, but justified.

The airlines recognise that they face a tough task in convincing the public and governments, of this fact, but they also know that unless they can achieve that result, their finances will remain in the doldrums for a long time to come.

## Hungary wins \$10m bus contract from Kuwait

BY LESLIE COLLITT IN BERLIN

HUNGARY'S MOGURT foreign trade company and the Ikarus bus company have signed a contract with Kuwait's National Company to deliver 120 air-conditioned long-distance Ikarus 250-model buses worth \$10m (£6.6m).

The buses are to be used for Kuwait's services to Iraq and Saudi Arabia.

The Hungarian Transelektro foreign trade company has been chosen as general contractor for

the construction of a 130-km, 33 kilovolt power-line in the United Arab Emirates worth \$1m. Brazilian and Japanese companies were chosen as subcontractors.

Ganz company's electric meter factory in Gdöllő, Hungary, has won a contract to supply Brazil's Companhia Auxiliadora das Empresas Elétricas Brasileiras with 100,000 household electric meters.

The meters are said to be of a new, more accurate design which uses less energy. The contract is worth approximately \$1.5m.

Ganz's ship and crane works are to deliver a 700 hp tug boat and two launches to Syria worth some \$1.5m. The Hungarian foreign trade company Chemolimpex has signed a contract with a Turkish firm to deliver 30,000 tonnes of nitrogen fertiliser worth \$30m.

## EEC to protest at U.S. steel-plate investigation

BY PAUL CHEESBRIGHT IN BRUSSELS

THE EUROPEAN Commission will shortly have talks with the U.S. Government to protest about an anti-dumping investigation of West German and Belgian hot-rolled carbon steel plate sales on the U.S. market.

The EEC rejects the idea that its steel sales are causing injury to the U.S. industry.

At first sight, the Commission move appears to signal new tensions between the EEC and U.S. steel industries.

The investigation was prompted by a petition from Gilmore Steel, Department of Commerce officials in Washington noted that the investigation is demanded by law, provided the petition was filed in conformity with basic and simple legal requirements.

But the investigation implied no comment on the working of last year's agreement between

the U.S. and the EEC controlling sales of EEC carbon steel, including plate, on the U.S. market, they said.

This agreement has led to a 36.7 per cent fall in EEC sales of the material, comparing the first eight months of this year with the same period of 1982.

The European Commission argues that injury to the U.S. industry from the Belgian and German sales is difficult to imagine.

Under U.S. law, the anti-dumping investigation moves down parallel tracks in the International Trade Commission and the Department of Commerce.

If the ITS finds no evidence of injury, then the Department of Commerce will drop its examination. The ITS is expected to announce its findings on November 13.

## Commission acts against Asian watchmakers

BRUSSELS — The European Community yesterday accused Asian watchmakers of pouring their electronic products into Europe, and opened proceedings that could cut the flow.

A commission report said imports of quartz watches, mostly from Hong Kong, but also from Japan, Taiwan, Macao and South Korea, have reached such a level "that there is a grave danger to European producers."

France has been the hardest hit, the Commission said. Producers and governments on both sides will have 30 days to respond, and if the Commission upholds its findings, duties or quotas could be imposed.

According to initial evidence, Commission claimed that electronic watch imports rose from 42m units in 1980 to 52.9m in 1982 and 28.2m in the first half of 1983.

## U.S. warns Taiwan on counterfeiting

TAIPEI — A U.S. Congressional mission investigating commercial counterfeiting has told Taiwan that any trademark infringement could affect its status in the U.S. Generalised System of Preferences (GSP), U.S. trade officials said. Congress will consider new legislation for the GSP early next year.

Economic Ministry officials have expressed concern that Taiwan might lose its developing nation status in the GSP, which benefits 20 per cent of its exports to the U.S. each year. Taiwan's trade with the U.S. amounted to \$13.2bn last year.

Counterfeit goods ranging from computers to jeans are on sale openly in Taiwan and this has drawn strong complaints from U.S. companies. Reuters

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Peter R Whyte FMP STATEMENT - 28 October 1983

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SECURITIES ADMINISTRATION SERVICE	£	15,651
Allied Unit Trusts	2,578	
Other Unit Trusts	6,057	
Hambro Life Investment Bonds	2,506	
Other Investment Bonds	3,510	
Other Investments	1,000	
PORTFOLIO MANAGEMENT SERVICE		54,879
UK Gilt Edged Securities	3,650	
UK Equities	31,216	
Overseas Securities	17,183	
Capital Account Balance	2,830	
NET ASSETS IN FMP		76,837

### OTHER PAGES

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Diners Club Card - detailed transactions	p.3
Securities - list and valuations	p.4
Managed Portfolio - list and valuation	p.5
Investment Income - schedule	p.6
Your financial diary for next month	p.7

### FMP OVERDRAFT FACILITY

Overdraft Facility	£	34,317
*This figure is calculated by applying the agreed percentage to the value of your investments within FMP		

### ESTATE SUMMARY

NET ASSETS IN FMP	£	76,837
ASSETS OUTSIDE FMP		
Main Residence	100,000	
Less Mortgage	30,000	70,000
Other Property	15,000	
Less Borrowing	5,000	10,000
VALUE OF TOTAL ESTATE		156,837
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## UK NEWS

# N. Sea producers agree new pricing structure

BY RAY DAFTER, ENERGY EDITOR

BRITISH NATIONAL Oil Corporation (BNOC) has now won full industry backing - including, belatedly, British Petroleum acceptance - for a new package of North Sea oil prices.

BNOC's pricing recommendation, based on a retained reference rate of \$30 a barrel, has now been made effective for the three months up to the end of the year. A minor technical matter has still to be resolved with one North Sea company, but it is thought that this will not affect the overall pricing agreement.

British Petroleum was one of the last of the important producers to accept the recommendations. It had delayed acceptance partly because it was uneasy about the proposed changes of price differentials of various crudes, but also because it wanted to see how spot market prices settled.

Under the new agreement, for example, the price of BP's Forties Field oil is being raised from \$28.75 to \$29.90 a barrel to bring the rate more in line with the \$30 a barrel charged for similar Brent crude.

New prices (with previous prices in brackets) are: Brent \$30 (\$30); Forties \$29.90 (\$28.75); Ninian \$29.60 (\$28.35); Flotta blend \$29.30 (\$28.30); Beatrice \$29.30 (\$28); Argyll \$29.70 (\$28.45); Auk \$29.30 (\$29.05); Beryl \$30.25 (\$30); Brent spar \$30.30 (\$30.05); Bactan \$29 (\$28.50); Fulmar \$30.35 (\$30); Montrose \$30.35 (\$30.10); Statford \$30.40 (\$30).

It is estimated that the adjustment in price differentials will raise the average price of North Sea crude by about 0.5 per cent. But there were important signs yesterday that the international price of oil could remain stable until at least 1985.

Ministers of two leading members of the Organisation of Petroleum Exporting Countries (Opec), Venezuela and Kuwait, were quoted as feeling that the Opec reference price of \$29 a barrel should be maintained until 1985.

The views, quoted by official sources, were attributed to Sr Jose Ignacio Moreno Leon, Venezuelan Energy Minister, and Sheikh Ali Al-Khalifa Al-Sabah, the Kuwait Oil Minister, who have been meeting in Saudi Arabia.

They are said to have discussed the world oil market and ways of strengthening Opec's position. Sr Leon is on a tour of Arab oil exporting nations before a meeting of the Opec market monitoring committee session in Vienna on Thursday. Sr Leon said Opec's long-term strategy committee would meet in mid-November.

# Ricoh plans to bring production to UK

BY JASON CRISP

RICOH, one of the leading Japanese photocopier manufacturers, is to set up production in Telford in the West Midlands. It is the first Japanese company to announce plans to make office equipment in the UK.

The initial investment is £5m, which will create 100 jobs by early 1985. Ricoh expects to increase the investment to £15m or more within three years and the number of jobs will rise to 170.

Ricoh produces more copiers than any other company, including Xerox, which has, however, much higher revenues. Ricoh copiers are sold in Europe by Nashua of the U.S. and Kalle Infotech, part of Hoechst, and in the U.S. by Savin.

Since 1981 Ricoh has begun to sell copiers in Europe and the U.S. under its own name. Ricoh chose to manufacture in the UK rather than West Germany mainly because of the language, as many more people in the company speak English.

Mr Norman Lamont, Industry Minister, said yesterday: "Japanese investment in Britain has many attractions - technology, good management, import substitution and contributions towards solving the 'trade friction' problem."

"Britain has twice as much Japanese investment, in monetary terms, than any other European country."

Most Japanese manufacture in the UK is in the production of colour televisions, including Sony, which also makes television tubes, Toshiba, Matsushita, Mitsubishi, Sanyo and Hitachi with GEC, JVC, Sanyo and Mitsubishi assemble videorecorders and Aiwa makes hi-fi.

The largest single investment by a Japanese electronics company is a £40m plant built by the Nippon Electric Company.

The new Ricoh plant will begin by manufacturing the photoconductor drums and bottles of dry toner, the chemical which is used to form the image on a photocopy. The factory will supply the replacement drums and toner to other European countries.

Yesterday Mr Hiroshi Hamada, president of Ricoh, said the UK factory could eventually be used to assemble copiers.

Mr Hamada said: "We chose Telford because it is in the heart of industrial England and offers excellent communications. We hope our investment will help bring Ricoh more closely into the community in Britain and we look forward to being able to provide an increasing number of jobs as our success continues to grow."

"Our local procurement should also be able to assist the economy and provide additional job opportunities."

# Harland in pact with Japanese shipbuilder

By our Belfast Correspondent

HARLAND AND WOLFF, the state-owned Belfast shipyard, is to announce a co-operation agreement with a major Japanese shipbuilder.

The company said yesterday it was signing "a unique agreement" but the details would not be revealed until next week.

The only indication of the contents of the agreement was a hint that it could involve the sharing of technological innovation in ship construction.

Harland and Wolff is engaged in a major restructuring and the introduction of new technology, including computer-aided design and computer-aided manufacturing techniques.

Its losses for the year to March 31, 1983 - which will be announced next month - are likely to amount to about £40m compared with £26m for the previous 15-month period. The figures will reflect the cost of the restructuring including redundancy payments.

Harland and Wolff has been under instructions from the Government to reduce its dependence on state aid.

# Government cuts financial targets for British Rail

BY KEVIN BROWN

BRITISH RAIL'S financial targets are being cut by the Government.

Mr Nicholas Ridley, Transport Secretary, said yesterday that British Rail would be required to cut its reliance on public service operating (PSO) grants from the Government to £655m by 1986, two years earlier than planned. The PSO grant for 1983 would be £819m compared with £822m in 1982 and £825m in 1981.

Mr Robert Hughes, Labour's transport spokesman, told the House of Commons that BR was being forced to cut its investment programme "to live with the harsh economic climate this Government has created."

The new targets offered "are a glimmer of encouragement to those who seek a decent service."

He was told by Mr Ridley: "The objectives I have set make plain that it is not our intention that the board should embark on a programme of major route closures. This puts paid to the scare stories about the network about which we heard so much following the publication of the Serpell Report" (on the future of the rail system).

Mr Ridley said his letter to Mr Bob Reid, chairman of British Rail, in which the requirements were set out, was a "document of hope for those who travel on the railways and those who work on the railways."

The Government would continue to support worthwhile investment proposed by British Rail "clearly related to the objectives we have set the board."

The board is to be required, however, to press ahead with privatising British Rail Engineering and the Sealink ferry service, as well as seeking greater private sector participation in the rail network.

Mr Hughes said there was no mention in the statement of investment plans for electrification "which has been shuttled back and forth between your department and British Rail."

Withdrawal of grants could be accommodated only by cuts in services, line closures, fare rises and accelerated job losses, he claimed.

Mr Ridley said: "The greatest error of all is to fall into the trap that the more money you throw at the railway the better railway you have. I suspect that the opposite is the truth."

# Share flotation details likely today

BY MAURICE SAMUELSON

THE GOVERNMENT is expected to confirm today that it is to sell by a share offer the offshore oil interests of the state-owned British Gas Corporation.

The corporation has already been divested of these interests - valued at some £400m - and the Govern-

ment has entrusted them to a newly-formed company, Enterprise Oil, run from the office of Kleinwort, Benson, the merchant bank.

Sale of Enterprise Oil through a public share flotation will turn it into a sizeable new UK oil company with interests in five commercial

fields and 20 exploration blocks. The fields are Beryl, Hutton, North West Hutton, Fulmar and Montrose.

The sale will help the Government to meet its target of raising £1.25bn from sales of state-owned assets in the present fiscal year.

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# Court ruling freezes embassy's accounts

BY RAYMOND HUGHES, LAW COURTS CORRESPONDENT

BANK ACCOUNTS held in London by the Colombian Government were effectively frozen yesterday when the Court of Appeal decided that unpaid debts incurred by a foreign government could be seized from embassy funds.

The court held that garnishee orders nisi could be made on the Colombian embassy's accounts at First National Bank of Boston and Barclays Bank to satisfy a judgment obtained against Colombia by a UK company.

A garnishee order nisi allows a creditor to obtain payment direct from a debtor's bank account - subject to the debtor having an opportunity to challenge the order in court.

The Colombian Government was sued by Alcom, which claimed £41,690 for security equipment it

said it supplied to the embassy under contract. When the debt was not paid it obtained the garnishee orders which were subsequently cancelled by a High Court judge.

Sir John Donaldson, Master of the Rolls, said the embassy's work might be brought to a standstill as a result of the Appeal Court ruling.

He said this was something that Parliament might not have intended when it passed the 1978 State Immunity Act which lays down that foreign governments are not immune from legal claims in respect of commercial transactions in the UK.

But the court's understanding of the Act was that bank accounts could be used to satisfy judgments. The Colombian Government was given leave to appeal to the House of Lords.

# Bunge buys Bibby unit

BY CARLA RAPOPORT

BUNGE, one of the world's largest grain merchants, is making a major move into the European edible oil market with the £14m purchase of J. Bibby's edible oil subsidiary based in Liverpool in the north-east of England.

Bunge & Co, the UK arm of the international trader, intends to modernise and expand the Bibby operation in order to make it more

competitive with major international companies in the edible oil business. It is understood that Bunge is likely to spend close to £20m on upgrading the Bibby facilities.

"We're talking about creating jobs, not axing them," said Mr Alan Edwig, a director of Bunge in London yesterday. Bunge's UK sales last year were close to £1.2bn.

# BCal 'back in profit'

BY MICHAEL DOWNE IN NEW DELHI

BRITISH CALEDONIAN Airways (BCal) expects to be back in profit this year after a record summer in which traffic on some routes improved by 21 per cent. Last year the airline lost £850,000.

Sir Adam Thomson, chairman,

who is in New Delhi for the annual meeting of the International Air Transport Association (Iata), said Caledonian Aviation Group, the parent company, was also likely to be in profit for the year to October 31.

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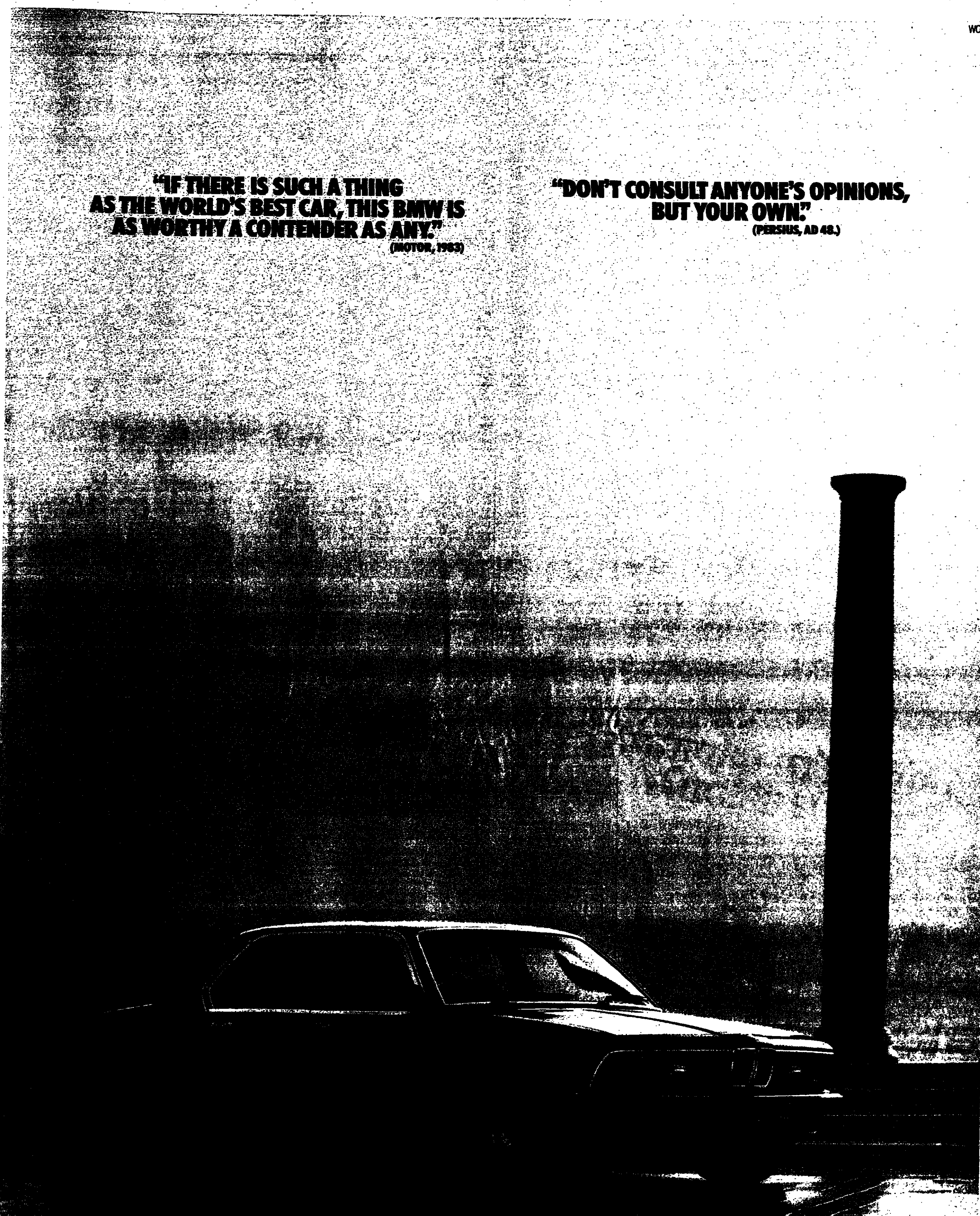


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Historians are divided as to whether Persius was recommending a test drive in the BMW 735i, or not. But he would surely have appreciated a concept of luxury that avoided the pointless extravagance that was to undermine his own Roman civilisation. And, in our own era, banish so many famous luxury marques to the motoring museums. For the BMW 7 Series has led the way in creating a quite new sort of luxury car: a machine that hones the automotive art

to perfection, rather than burdening it with superfluous. The engine now has BMW's second generation of electronic engine management, when most other cars haven't yet reached their first. It now runs on such a lean mixture of petrol and air that it uses up to 25% less fuel than its more traditional rivals. Such frugality owes not a little to the optional automatic gearbox. It's actually more economical than the equivalent five-speed manual gearbox.

Its straight six engine is also a paragon of smooth efficiency, surging our car as quickly to 60 mph as others relying on twice as many cylinders. Its deceleration is equally impressive: with ABS anti-lock braking, it can stop up to 40% faster. Taken together, such virtues create a vehicle designed to be driven rather than merely be passively steered. "BMW's power steering is among the very best" added Motor, who seem to share our view that power steering has become

a synonym for sloppy unresponsiveness. For all this, the 7 Series still has all the best points of the traditional luxury car: from a mirror-like paint finish to an interior equipped in a manner which owes nothing to Sparta. But Persius was right. Ask your nearest BMW dealer to bring a 7 Series right to your doorstep. We think you'll agree it's a classic.



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## THE MANAGEMENT PAGE : Small Business

EDITED BY CHRISTOPHER LORENZ

## An urgent search for cash

Raymond Snoddy considers the problems of an innovative business seeking to expand

STEWART HUGHES, a small high technology Southampton company employing fewer than 30 people believes it has a world lead in the application of computers to the problems of diagnosing the health of complex machines.

If all goes well it hopes that a portable diagnostic system could be in widespread use in the Navy within three or four years. It should allow the mechanical health of helicopters — particularly rotors and transmission systems — to be checked quickly and avoid the need to strip the machines down at predetermined intervals. This could increase flying time — something that would have been very useful during the Falklands war.

Stewart Hughes is trying to eliminate the need for head scratching in diagnosis and "provide logic within the computer itself that will effectively recognise solutions and give answers immediately. The company will probably have a five year lead," says Dr Ralph Collicott, founder and director of the Institute of Diagnostic Engineers.

But Stewart Hughes has also diagnosed another serious problem — one much closer to home and one which the sophisticated rules it writes into the software can do nothing to cure. It is a problem faced eventually by most small companies. How can innovative and promising research be turned into products which can be produced and marketed on a large scale, and where is the money to come from to finance the process.

Ken Pipe, the company's marketing director, has no illusions. "We are in a five year race," he says. "We have to get established in the time it takes our major competitors to react."

Stewart Hughes was founded three years ago as a commercial spin-off from Southampton University's Institute of Sound and Vibration Research by Ronald Stewart, an engineer who once worked for Rolls Royce, and Tony Hughes, a microelectronics specialist. Their greatest strength, they believe, is their combination of engineering and computer skills.

The achievements so far have been real. Apart from the Royal Navy, pre-production models of the main product



(L to R) Tony Hughes, Ron Stewart and Ken Pipe diagnosing others' engineering, and their own financial, problems

MSDA (mechanical systems diagnostic analyser) are at work in such places as GEC, a CEGB power station and Westland helicopters.

And recently the company was able to save the elastomers division of Esso chemicals at Fawley a considerable amount of money and prove an important point.

A gearbox started giving off a knocking noise and management began to draw up contingency plans to shut the plant down, four months ahead of the next scheduled downtime. Stewart Hughes was able to demonstrate that the problem was not immediately catastrophic and that the plant could keep going — avoiding a major loss of production.

Their offices in the Chilworth Centre for Advanced Technology includes the room where Eisenhower planned the D-Day landings. This is a useful introduction for a company trying to break into the U.S. which probably accounts for 85 per cent of an estimated \$200m world market for mechanical health monitoring.

Yet none of this is possible without finance. At the moment

Stewart Hughes need £750,000 to launch the new arm and it is always looking for more funds to speed expansion. Last week for instance Pipe was in Brussels to raise pressing questions at the European Commission on the financial help available for small innovative companies. He wanted to know exactly what help would be available for small and medium-sized enterprises from the proposed Basic Technology Research programme — designed to encourage innovation in traditional industries.

He also wanted to check the progress of Stewart Hughes' proposal for inclusion in the Esprit programme, which is seeking to encourage collaboration for advanced projects in the European electronics industry.

Although there is no sign of money from the EEC yet, or from the Alvey directorate in the UK which is trying to stimulate the technology needed to create a new generation of "intelligent" computers, Pipe believes the money he needs can be raised. He hopes to get around £300,000 from retained profits and a company restructuring, and a further £300,000 from a planned joint venture with an American partner.

Talks are well advanced with a U.S. East Coast company in the aeronautics industry. "We will give them access to technology; they will give us access to the American market,"

Ken Pipe says optimistically. The balance will be raised from private venture funds or from employees.

The Government, he believes, should do more to stimulate new markets for technology by buying more of the technology itself.

The fact that Stewart Hughes is planning a major expansion at all is largely possible through having received a total of £2m-worth of orders from the public sector. Research and development grants, by comparison, have totalled £30,000.

Ken Pipe would like to see an expansion of two schemes which Stewart Hughes believes are more useful to small innovative companies than straight research grants.

One is the Pre-Production Order scheme where the Government pays the cost of installing new equipment with a customer for a trial period. If the user wants to keep it it can be bought from the Department of Trade and Industry on depreciated terms. If it is not wanted the original manufacturer must pay.

The scheme got Stewart Hughes into three important sites.

The other — the Market Entry Guarantee scheme — the company hopes to use to break into international markets. It provides 50 per cent of the costs of setting up or expanding international marketing operations and the money is paid back as a proportion of earnings.

Even now that Stewart Hughes is poised on the edge of what has to be its breakthrough, Ken Pipe believes there is still only an even chance of achieving its objectives. "But at least the chances of going bust are now very remote," he says.

It is a caution shared by Dr David Holt, director of research and engineering at Westland who has been watching the progress of the company.

He believes Stewart Hughes is on the right lines to achieve a major goal of the helicopter industry: being able to "repair on condition" rather than after a predetermined number of flying hours. "Whether it can sustain it both technically and financially is the real question," he says.

## A good time to run for cover...

Eric Short on Small Firms Insurance Week

Gordon Hayman of Hayman, Jackson Insurance Brokers, which operates in West Surrey and East Hampshire, admits that insuring old buildings can be difficult. But he says he can always place the insurance at a price. The "multiple risk" — where there are several tenants, — is a problem if he is acting for just one or two of the occupants. He often finds himself arranging insurance for the owners of leased property.

Many businesses, meanwhile, start with second-hand machinery obtained cheaply. The broker has to convince the businessman that it is unwise to assume that damaged equipment can be replaced second-hand. If possible the insurance cover should be based on the cost of full replacement with new machinery.

Many businessmen also need

to be convinced of the need to insure against trading losses resulting from fire, flood, theft, water damage and other perils. During the time taken to restore the business to full working order, customers are lost and have to be wooed back. Expansion schedules go out of the window and so on.

It used to be standard practice to assume that full recovery from disaster took a year, and that loss of profits should be covered over this period. But Ron Woodward of Pharos Insurance Brokers in East Kent considers that getting back to normal can take two years.

Many insurance companies in recent years have produced a series of off-the-peg package insurance contracts designed to meet the needs of specific types of small business, such as shops, offices and so on. Both Woodward and Woodward agree that these

mostly give value for money, and are better than trying to put a series of policies together.

It is vital, however, to ensure that the package suits the needs of the business — something a good insurance broker will be able to do.

Small businesses usually offer their clients more than just insurance cover and businessmen should seek advice on ways to reduce risks and avoid disruption.

Brokers may, for example, remind clients to keep duplicate computer tape records and remove them each night from the building. After all, insurance brokers are often small businessmen themselves and well aware of many of the problems of their clients.

Small businesses can expand quickly and many brokers like to review their clients' needs at least once a year or every six months in the case of newer businesses. It should be remembered that brokers live on commission and proprietors should beware of those which encourage unnecessarily extensive cover.

The leaflet issued by BIFA provides a checklist and can be obtained from the Consumer Relations Department, British Insurance Brokers Association, Fountaine House, 130 Finchchurch Street, London EC3M 6DJ.

## In brief...

MORE than £400m has now been committed to small businesses by the 30 banks and other financial institutions using the British Government's Loan Guarantee Scheme. But the latest figures show some significant differences in the take-up by major lenders.

Under the scheme, which was one of the last Tory Government's most controversial measures to help small firms, the Department of Trade and Industry guarantees the repayment of 80 per cent of medium term loans made by approved banks to eligible businesses.

National Westminster Bank, which has more branches than its major high street rivals, says it has committed more than £100m under the scheme to over 3,000 businesses. Noel Dearing, manager of NatWest's small business section, says that half of those were in manufacturing, 60 per cent were new ventures, and that an estimated 12,000 new jobs have been created.

Other banks participating in the scheme, however, report substantially lower individual totals. Barclays says that it has committed approaching £50m to about 1,500 businesses, Midland has made loans of £60m to 2,000 companies, while

Lloyds (up to the end of August) had also committed nearly £60m to more than 1,500 business borrowers. IFC, part of Investors in Industry (IIL), has lent £19.6m to 446 businesses under the scheme.

"We have not been actively promoting the scheme in view of the criticism that the banks have been hiding behind the Loan Guarantee Scheme," a Barclays spokesman explains. "We have been taking more risks under our own lending schemes and only using the Government's where it is appropriate and where we feel it was meant to be applied."

Ministers will have to decide this winter if the current "pilot" scheme, introduced in June 1981, is to be made permanent when the £600m which has so far been made available runs out in the middle of next year. A major analysis of companies which have received support as a result of the measure was recently commissioned by the Department of Trade and Industry.

Concern was voiced earlier this year that banks were not seeking sufficient personal commitment from borrowers, although one of the key features of the scheme is that personal security is not required. The Treasury is also anxious about the number of companies

reported to be falling under the scheme. The 3 per cent premium which borrowers have to pay is by no means sufficient to meet the cost of honouring guarantees. An earlier independent report suggested that the failure rate could ultimately be one in five but some observers feel that given the difficult economic environment in which most started life, even this could be optimistic.

CONFERENCES and seminars on venture capital are two a penny these days. But the Venture Capital Financial Forum, due to be staged by the Financial Times and the British Venture Capital Association in London on December 1 and 2 represents a fresh approach. The aim is to introduce about 20 leading venture capital-backed UK companies and their executives to fund managers from financial institutions and other organisations interested in this type of financing. Many of the companies will be raising additional funds privately or seeking a public quotation at some time in the future.

The conference will consist of short presentations in the mornings by senior executives of the participating companies, followed by private sessions

between companies and delegates in individual meeting rooms later in the day.

Enquiries to FT Conference Organisation, Minister House, Arthur Street, London EC4R 9AX. Tel: 01-621 1355.

FOUNTAIN Development Capital Fund, which is managed by Hill Samuel on behalf of the Airways Pension Fund, British Rail Pension Fund and Refuge Assurance, has injected £300,000 of equity for a 10 per cent stake in NFI Electronics of the Isle of Wight. NFI — which manufactures touch panels and membrane switches for industry and hopes to double both production capacity and its existing staff of 110 over the next three years — was the third winner in Hill Samuel's Awards for the most promising small UK companies in 1982. NFI plans a USM listing in 1985.

CO-OPERATIVES in London now number 153 compared with 67 in 1980, according to the Industrial Common Ownership Movement (ICOM). A list of their products and services is available in a new directory published by London ICOM, 245a Colindale Avenue, London NW9 1RR. Price 75p plus 20p post and packing.

Tim Dickson

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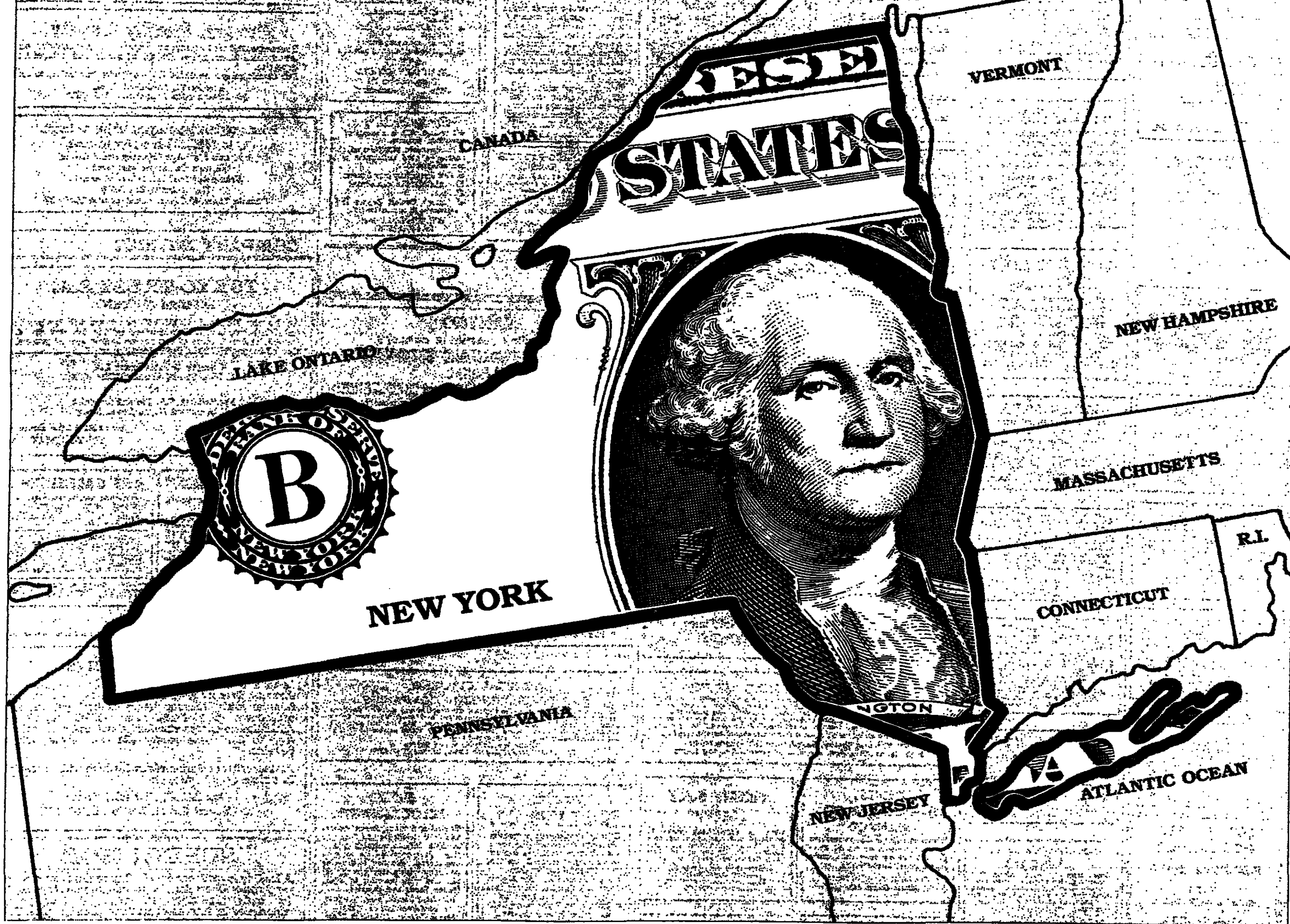
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## THE ARTS

## Juno and the Paycock/Glasgow

Martin Hoyle

The paradox of John Casey, born to a staunchly Protestant loyalist middle-class family, ending his life as a sceptical Marxist, self-exiled in England, lies in his eternal identification with tenement Dubliners agonising through the birth-pangs of the republic.

The paradox of Giles Havergal, lively and unpredictable, is that on this showing at least, he wants to direct opera. Or film. Or TV. But not, it seems, Sean O'Casey's *Juno and the Paycock* at the Citizens Theatre.

Taking his cue from the *Twelve Angry Men* by mother and daughter at the party to celebrate the illusory windfall, Mr Havergal underlines the ominous with sinister music, an occasional melodramatically darkening stage, and the ghost of the betrayed republican soldier (in a red spotlight, to tremolo strings), more like Verdi's *Banquo* than Shakespeare's.

The signs of a robust Grosscup-expressivist approach, intended to undercut the naturalism that O'Casey can turn sentimental, are immediately apparent in Kenny Miller's set. The Boyles' flat is flanked by piles of dingy kitchen chairs, jumbled in confusion along the floor, like a barbed-wire demarcation of domestic territory. A pile of crates does duty for the kitchen sink.

The huge reveals a towering mass of forbidding black panels arranged in tiers on which neighbours pass, soldiers prowl, and the trench-coated irregulars keep tabs on Johnny, the suspected traitor. These walkways exert a curious alienating effect on entrances and exits: characters must scuffle along one level into the wings only to re-enter on another, in a zig-zag progression.

The costumes take the stylisation to bewildering

lengths. Juno's matriarchal full-skirted poverty is extravagantly ragged and could belong to any period between 1870 and 1910. Her husband and (especially) the reprobate Joxer are dressed as tramps. A family of tinkers, it seems, but with a daughter whose dress and hair do recall the early Forties: this Mary looks like every GI's girl-friend.

Mr Havergal's production is equally eclectic. It emphasises the humanity. The gut-ridden Johnny's cry, on hearing of the supposed legacy, of "We'll be able to get out of this place now and go somewhere where we're not known" prompted a roar of audience laughter: this family is less Gross than Guinness. The men certainly illustrate O'Casey's unsparingly depicted male weakness: never have I seen such an unlikely Joxer. Idleness, selfishness and hypocrisy put paid to the lurking myth of the lovable Irish.

Feminists will note that there is no ambiguity in Juno's lament: "Is there not even a middlin' honest man left in the world?" The male sex gets it in the neck; and Juno's assertion that her illegitimate grandchild, lacking a father, will have something "far better—two mothers" has a *Guardian*-like ring to it.

It's not Johanna Kirby's fault that her Juno is too young and lightweight. Attempts at maternal warmth lead to an earnestness that occasionally misses the irony, but gives her desire for "less regard for the dead and more respect for the living" a bitter relevance for Celt and Anglo-Saxon alike. Charon (the warlike Mary) is herself a potential Juno; there is sterling support from Laurence Rudić's primly sanctimonious Needle Nugent and Jane Berish, never quite going over the top as Mollie Madigan.

## The Duchess of Malfi/Oxford

B. A. Young

Webster's tragedy is full of expressive, atmospheric dialogue, the lines rich with overtones. Jane Howell's production for The Oxford Playhouse relies a good deal on the value of the words. Her stage is bare, quartered with lines of latitude and longitude, the doors in the sliding panels upstage enough to suggest a prison cell in Italy; and Stephanie Howard's costumes cunningly suggest the class-distinctions which are important in the plot.

It is handsome, in fact, and sinister moments like the unloading of the Duchess's apparently murdered family, the intrusion of the lunatics, and the Duchess's death, are particularly effective. Unfortunately, the speaking of the words is fatally inadequate.

I say the speaking, rather than the acting, because if you were content to absorb the play simply from what you see, you might think you were at a good performance with the sound turned down. But most of the dialogue is very flatly spoken, and all the often words are then away so carelessly that their sense is unheard. The best-known line in the play, Ferdinand's "Cover her face, mine eyes dazzle. She died young," loses its first phrase altogether as an excited grunt.

Annabel Leventon's Duchess can be excluded from these objections. She looks ravishing under her white wig, and plays in public with dignity and music, and with private, even her posthumous voice, echoing in whispers from the back of the circle, has the quality you might attribute to a woman who has died with grace and less struggle than you would expect from a public strangulation. David

## Star cast for RSC's 'Poppy' transfer

The Royal Shakespeare Company's hit musical *Poppy* by Peter Nichols, with music by Monty Norman, which won the "Most Popular" award at the 1987 Brit Awards when first seen at the Adelphi Theatre in November (previews from November 9).

It includes Alfred Marks, Geoffrey Hutchings, Antonio Ellis, David Firth, Nicholas McAuliffe and Ken Wzane.

## Kettle's Yard Gallery, Cambridge/William Packer

## A blast of the avant-garde



There will always be artists, great artists, whose achievement is quite disproportionate to the actual physical scope of their work, whether of scale or quantity; but though such reputations quite rightly stand high, it is rather more unusual for them to carry a considerable weight of direct influence upon a particular school of followers or more generally spread across a generation. For the influence to be the equal of the work itself, let alone outweigh it, is more than a romantic exaggeration, can easily become the rule.

But with Henri Gaudier-Brzeska, that extraordinary shooting star across the firmament of the pre-war avant-garde, Mort Pour La Patrie in a French infantry attack upon the German lines in June 1915, and not yet twenty-four, we come away from the collected work, such as it is, with the uncomfortable feeling that every claim made on his behalf may very well be true, the romantic critical apotheosis very thoroughly earned. That enough of the work survived at all, let alone today, is a proper view, is due to the chance of the right eye falling on it at the right time; which collection, a major part of the extensive collection of modern art with which Jim Ede filled his house at Kettle's Yard, Cambridge, and then gave to the University, gives us the backbone of the small, disproportionately important exhibition now at Kettle's Yard (until November 20) then on to Bristol and York.

Gaudier was Frenchman whose education was oddly peripatetic, even for that easy travelling time, fetching up in Paris in 1910, after periods in Bristol and Germany, and newly determined to be a sculptor. His family apparently disapproved of his association with Sophie Brzeska, whose name he added to his own, and in 1911 he came with her to London, where he was to spend the rest of his working life. Notebooks and drawings pre-date this last period, of course, but all his sculpture falls within it, with an ever-increasing concentration of energy and output towards the end. Virtually all of it was done in England, and the drawings, which we are inclined to claim him for our own.

But, important as his contribution undoubtedly is to the history of British sculpture, his is a salutary foreign presence, giving the art in the narrow, chauvinism of art history by national school or category. For he was a figure in our art world at a time when the artists of the avant-garde, the very people

with whom he associated, were consciously engaged with what was going on abroad, in Paris, Milan, Munich, Moscow, were familiar with the principals, and always anxious for the latest news. Gaudier was a protagonist of Vorticism, the peculiarly British corresponding development to Futurism and Cubism, and thus the intimate associate of Wyndham Lewis, the high priest of the movement, and Ezra Pound, its chief apologist; and with them he saw it all not as a containment and a definition, but as a universal principle, all-embracing, offering a new way through art to see and understand the world.

He was nothing if not wholehearted about it, as his sculptor's manifesto, published in *BLAST* in June 1914, most emphatically shows. "Sculptural energy is the mountain. Sculptural feeling is the appreciation of masses in relation. Sculptural ability is the defining of these masses by planes." *BLAST* ran June 1914, most emphatically shows. "Sculptural energy is the mountain. Sculptural feeling is the appreciation of masses in relation. Sculptural ability is the defining of these masses by planes." *BLAST* ran June 1914, most emphatically shows. "Sculptural energy is the mountain. Sculptural feeling is the appreciation of masses in relation. Sculptural ability is the defining of these masses by planes." *BLAST* ran June 1914, most emphatically shows.

And so he

continues in a hectic, assertive, irresistible rush. "And we the moderns: Epstein, Brancusi, Archipenko, Dunikowski, Modigliani and myself, through the incessant struggle in the complex city, have likewise to spend much energy. The knowledge of our civilisation embraces the world, we have mastered the elements... Will and consciousness are our VORTEX." Clearly, with such a person, however we may see him, he saw nothing of the little Englander in himself.

Shortly after his death, "Gaudier Brzeska—A Memoir" was put out by his friend, Ezra Pound, an odd and fascinating mélange, part biography and personal anecdote, part a full anthology of his writings, part critical assessment. It soon achieved a coterie reputation, the specialist bible in particular of the group of young, advanced sculptors active in London in the twenties. Henry Moore most of all: for it showed how Gaudier had made sense of a situation that was still current in their time, how he had broken free of the restraining, literal humanism, as they saw it, of the Renaissance tradition, and how he had achieved, in a way, a more complete, more invigorating, infinitely comprehensive example of the Primitive, there for him, as later for them, set out in the glass cases of the great museum collections of France and England.

## Les Arts florissants/Wigmore Hall

Stanley Sadie

London debut.

They performed an excerpt from their eponymous work, but his Charpentier piece that chiefly showed the composer's stature was his miniature oratorio or Passion motet *Le Reniement de St Pierre*. This is a remarkable work, a dramatic and profoundly poignant setting of Peter's denial.

It was done with the greatest refinement by Mr Christie's group. He used seven singers, most of them excellent, and focused voices of a kind which makes it easy to hear the contrapuntal lines, and, what is

more, he has them mould the music generously so that the dissonances could be stressed and their emotional effect heightened. Arguably he goes a shade further than the stylistic constraints of the period might allow: in Edmeffe Moullin's *Contique de Moise*, a rather earlier piece (1898) but also vividly written, the dynamic shaping seems excessive. There was more music by Charpentier, including a comic setting for a Molière play; like a rather earlier piece (1898) but also vividly written, the dynamic shaping seems excessive. There was more music by Charpentier, including a comic setting for a Molière play; like a rather earlier piece (1898) but also vividly written, the dynamic shaping seems excessive.

Lambert, where there was some most delicately moulded singing. The soprano Agnes Mellon showed a rare command of the sophisticated style in her sensuous, subdued, gently languid account of "Le Repose" and again, with exquisite shading and delicate ornamentation, in "Farnesburgh". The other soprano, Jill Feldman, sharper in voice, caught beautifully the pain of "Ombre de mon amour". The harpsichord was a heavy accompanying instrument, but eloquent enough when Mr Christie himself was at the keyboard.

## Great British Music Festival

Andrew Clements

In 1981 the London Orchestra Concerts Board and the BBC joined forces to mount a series of contemporary-music concerts under the title of "Music of Eight Decades." The plan was for the four independent symphony orchestras and the London Sinfonietta to share the programmes with the BBC Symphony, giving identity and purpose to the symphony orchestras' timid ventures into the music of today. Audiences for the subscription series were refreshingly good; three of the big four orchestras took part, only the London Philharmonic falling to join in.

A new "Music of Eight Decades" begins in the Festival Hall next Friday. This time, however, the series is simply a joint venture between the BBC and the Sinfonietta; the four symphony orchestras are conspicuous by their absence. They have chosen instead to launch their own series, ambitiously titled "The Great British Music Festival 1925-1975"—six programmes evenly split between autumn and spring, and loudly proclaimed as the first time the orchestras have joined forces to promote a series of concerts. Memories seem very short.

The result is as depressing as a rag bag of second-rate music as could be imagined. It's impossible not to come to the conclusion that the Big Four's antipathy to programming and playing contemporary music has led directly to this deeply conservative and parochial venture; there is nothing in it to rock the box office, nothing that is not safe and undemanding. Doubtless the series has mopped up the Arts Council's special grants to the orchestras for rehearsing and performing 20th-century music for this season, and probably a lot more besides.

The opening concert on Sunday provided at least one nice irony. The hall was by no means full; certainly the audience was smaller than for several of the "Eight Decades" series two years ago. When public subsidy is as tight

as it is at present, that should be no cause for celebration, but the Great British Music Movement in its manifest forms has for too long foisted an illusion on its subsidisers—that there is an enormous audience waiting for the Great British Musical Heritage to be delivered up to them, and that any cause if it is trumpeted enough will attract zealous supporters.

If the series gives the lie to that, it will perhaps have been worthwhile. The first programme was given by the London Symphony Orchestra and Chorus conducted by Richard Hickox. It consisted of the Ritual Dances from *The Midsummer Marriage*, the first London performance of Lennox Berkeley's cello concerto and Taverne's *The Whale*. It was not well played. The LSO showed a return to its form of last season—sloppy and inattentive, scarcely a rhythm or a texture in the Tippet well focused, balance all over the place. Berkeley's cello concerto (written in 1939, but only premiered earlier this year at Cheltenham) proved a short-winded piece of note-spinning, undistinguished melodically and technically constructed; all Moray Welsh's strivings could not make the solo part anything more than a string of unmemorable gestures.

*The Whale* will be remembered as the work with which the London Sinfonietta introduced itself in 1968. Now it seems impossibly dated; Taverne's music has become more austere and sombre since, but the essential stasis of its construction is still recognisable. The modish abstract, lorry loads of percussion, tapes, megaphones for the chorus—are superimposed upon a primitive rhythmic and harmonic framework; strip away the accessories and nothing remains. Timothy West as the narrator, Felicity Palmer and Stephen Varcoe the secure soloists. It's salutary to remember that *The Whale* is the most undemanding work the British Music Festival will be offering its audience in six concerts.

## Annie Fischer/Elizabeth Hall

Dominic Gill

The last of Miss Fischer's three Sunday afternoon piano recitals was also sold out, and displayed the same lucid, sweet-tempered eloquence which David Murray remarked here after her first. It has been a wide-ranging survey of familiar repertoire: Mozart, Schubert, Schumann, Chopin, Brahms and Debussy. But they have been performances, too, at every turn, rich with the insights of a truly re-creative artist—Miss Fischer has the knack of tilting a familiar picture ever so slightly to reveal a new perspective, an original colour, an unfamiliar emphasis.

She began with Mozart's great C minor Fantasy K475—a candid rather than a dramatic presentation, oddly compelling for its very understatement. She ended with a *Requiem*, separated by the bare pause, to the sonata K457 in the same key; and perhaps, after all, the austerity of the Fantasy had been part of the plan, for her treatment of the sonata's first movement was (and in context seemed all the more so) grippingly outspoken, lapped with unexpected fire. Its adagio was spun out in wonderful seamless cantabile: how many pianists could learn from Miss Fischer's effortless, exquisitely nuanced phrasing of Schubert and Mozart!

In Debussy her instincts were

unerring: I am sure that if the composer had heard the way she changed that puzzling bar in the Prelude of the *Suite bergamasque* marked *molto pianissimo* into a sudden, pungent *forte*, he would have agreed that her version is better. Directness, clarity and urgency are the words instantly summoned by her *Moment* and "Passepied"; her "Clair de lune" was a marvel of precision, deeply sentimental, wholly unself-indulgent.

Apart from a substantial memory-lapse in the middle of *Le Cygne*, which mattered little, her Mozart and Debussy were remarkably accurate. She reserved her splashes for Brahms's F minor sonata in the second half: a powerful, heady, urgently communicative and convincing account, balanced on a razor's edge. But crystal-clear definition of every chord is less important than definition of the force, character and direction of the music, and these Miss Fischer defined superbly. A few of the fluffs, especially in the slow movements, were puzzling; but by and large they seemed (as in the greatest Scherzo performance) not so much lapses of concentration as an overworking of it, paradoxically less a hindrance than a quick and joyous straining to the music beyond the notes.

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## Arts Guide

## Opera and Ballet

## LONDON

Royal Opera, Covent Garden: no opera performances—this week the schedule is devoted to the ballet.

English National Opera, Coliseum: the ENO begins a new cycle of Wagner's Ring with *The Valkyrie*, produced by David Pountney, conducted by Mark Elder, with Linda Eubank, Gray, Josephine Barrow, Anthony Radford and (sole survivor of the previous Ring) Alberto Remedios. Further performances of the triumphant new Ring, Wagner's untidy early Grand Opera, carved by male force and brilliant stagecraft into an examination of Nazi megalomania.

Royal Opera House, Covent Garden: the Royal Ballet presents *Makkarava* as *Macon* on Monday (essential viewing) and Thursday will show the debut as *Makkarava* of the hugely gifted young Alessandra Ferri. On Wednesday, Swan Lake.

Sadler's Wells, Rosebery Ave: mine company Lindsay Kemp is on view, with programmes which the theatre notes are "probably not suitable for children."

Musical/Monday, Opera and Ballet/Tuesday, Theatre/Wednesday, Exhibitions/Thursday, A selective guide to all the Arts appears each Friday.

## PARIS

Rosini's "Moses" in a new production by Lucie Ronconi conducted by Georges Frétre with Samuel Ramey and Shirley Verrett alternates with Puccini's *Madame Butterfly*, conducted by Alain Lombard in Teatro Comunale de Florence production with Raima Kabanova/Elaine Gavetti as Madame Butterfly at the Paris Opera (288.5022).

"Vive Offenbach" conducted by John Burdick, produced by Robert Dery at the Opera Comique (288.6011).

## NEW YORK

Metropolitan Opera (Opera House): Besides the centenary gala, the fifth week of the season includes *Peter Grimes*, *La Bohème*, *Le Fils du Régiment* and *La Forza del Destino*. Lincoln Center (680.9820).

## ITALY

Venice, La Fenice: Carolyn Carisone, Ballet (Fri, Sat, Sun).

## BRUSSELS

"La Passion de Gilles" premiere of Philip Boesmans' opera, conducted by Pierre Bartolomee; Peter Gottlieb

and Charlie Parley as Gilles de Rais and Jean de Arc. Théâtre Royal de la Monnaie (Fri, Sat, Sun, Tue, Thur).

## WEST GERMANY

Frankfurt Opera: *Jenufa*, reproduced this season has Duniz Maslovic in the main part. Der Freischütz, a new, ultra-modern production, convinces thanks to Walter Rafertner in the part of Max. Farnes Leben is a well done repertoire performance. Cav and Pag brings together Seppo Ruden and Galina Sovova. My Fair Lady gives a light touch to the week.

Munich, Bayerische Staatsoper: Schönberg's *Moses und Aron* is introduced to the programme this season. *Lohengrin*, produced by Angelus, is well worth a visit and has Siegfried Jerusalem and Ingrid Björner. Peer Gynt, produced by Kurt Hoyer, has Cheryl Shuler and Astrid Varney both excelling in their parts. Die Lustigen Weiber von Windsor is of respectable standard, with Lucia Popp and Wolfgang Brendel. This week's highlight is Don Giovanni, sung in Italian, featuring Francisco Araiza and Judith Beckmann in the main parts.

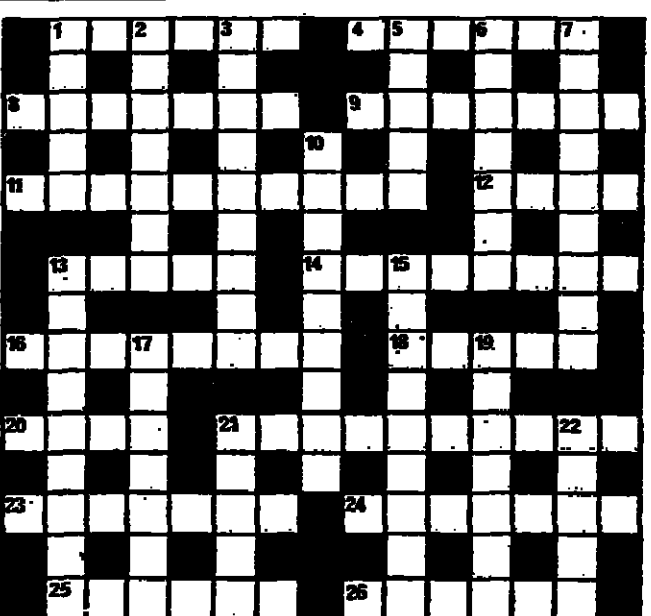
## F.T. CROSSWORD PUZZLE No. 5251

## ACROSS

- South African flower colour (6)
- Mother rejected Lamb and read Fielding's work (8)
- Crown sees jetty decay (7)
- Impute a writer (7)
- Winsome individual goes to island retreat (10)
- To some extent, coat hangers can be a curse (4)
- Sailors from Epsom? (5)
- Beer may make him feel at home (8)
- The cause of many a rising (8)
- Is one adjusted to sound? (5)
- Last year somewhat painful (4)
- A novice drops out of Oriental race possibly for amusement (10)
- New maser accepts the last vessel (7)
- Together in action—it's a way of selling (7)
- Can needs mother to reach Dutch port (6)
- Happy looking worker in the cloth industry? (6)

## DOWN

- Love to donate a window (5)
- Unopened hair spray (7)
- On drugs maybe, the Spanish provide the weed (8)
- Intermediate, my French quarters (5)
- Fellow leaves London road curiously to get bacon (7)
- Poor Great Britain without money due to currency purchases (9)
- In which Barker may be trained (9)
- Addison's outlooker (9)
- of Jenny's case (The Merry Wives of Windsor) (9)
- Grateful as Lear's fowl (7)
- Meantime, an edict of the German emperor (7)
- Always up entertaining English judge (5)



Solution to Puzzle No. 5250



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Tuesday October 25 1983

## Mr Reagan's response

THE POSITION of the 5,700-strong multinational force in Lebanon has always suffered from a fatal ambiguity about its role. It was sent over a year ago after the massacre of 900 Palestinians at Chatilla to reassure the civilian population and as a symbol of international support for the Government of President Amla Gemayel.

Within months this changed. The contingents of the multinational force, notably the 1,600 U.S. marines which form part of it, became the chief military ally of the Lebanese administration. In the recent war in the mountains overlooking the Lebanese capital, the regular army was only able to maintain its positions because of naval gunfire from the U.S. Sixth Fleet offshore.

## Devastating

It is hardly surprising that the groups opposed to the Government should react against the multinational force in its role of ally of President Gemayel. Over the last 10 days sniping and rocket attacks have led to a trickle of casualties and this was expected to get worse. What nobody expected was the enormous casualty toll from Sunday's attacks, though an almost exactly similar car bomb, which blew up the U.S. embassy in Beirut in April killing 60 people, should have prepared the U.S. and other contributors to the multinational force for some devastating response.

President Reagan now promises retribution against whoever was behind the explosion: it is unclear how far this chimes in with the popular mood in the U.S. In an election year the White House will be particularly sensitive to domestic American politics but in Lebanon, supporting the guilty party is even identified, any act of vengeance will only make a bad situation worse.

The White House would do better to work out a long-term policy for Lebanon. The danger of tumbling from expedient to expedient is now all too obvious. It is reasonable for Washington to give strong support to the Lebanese Government, but ever since the Israeli invasion the U.S. has tended to make the

Lebanese administration overconfident. President Gemayel failed to coordinate the Druze and Moslem communities or reach an understanding with the Syrians in the year after he was elected partly because he thought his alliance with the U.S. would save him from such a necessity.

## Deferred

The recent ceasefire was made possible by the agreement to bring in neutral observers and to convene a meeting of the National Reconciliation Council on which the opposition was to be represented. The meeting has been endlessly deferred with each side blaming the other. The U.S. should now press the Lebanese Government very hard to reach some understanding with the opposition leaders and thus to strengthen its legitimacy.

At present the multinational force is in danger because this legitimacy is lacking. Many Moslems, perhaps unfairly, see President Gemayel's administration as a front for Christian domination. The President himself admits that his Government controls between 10 and 20 per cent of Lebanon's national territory.

The Government therefore leans on the U.S. and the multinational force for support. They in turn find they have attracted the antipathy of all the many enemies of President Gemayel's regime. The multinational force or even the Sixth Fleet cannot, in the long term, make up for the Government's basic lack of support among Lebanese Moslems who are supported by Syria.

## Stability

If the multinational force is to stay, it cannot do so as the ally of one party in Lebanon's long-running civil war. The price of this was brutally underlined on Sunday. In the long term the continued presence of the multinational force can only be justified if it is in Lebanon in support of a more broadly based Government. It is this that President Reagan should press for in order to create a measure of stability in Lebanon and reduce the danger to U.S. and other foreign contingents in the country.

## Consistency in merger policy

MINISTERS responsible for British competition policy accept the case for greater consistency in the merger vetting process, but not for a drastic overhaul of the arrangements contained in the Fair Trading Act of 1973. That was the gist of the speech delivered to last week's Financial Times conference on mergers by Mr Alex Fletcher, Minister for Consumer Affairs in the new Department of Trade and Industry.

Mr Fletcher said that most mergers have a market rationale in which the Government does not wish to interfere. There were a few cases, usually less than a dozen a year, where the merger "raises questions about the power or efficiency of the merged unit, or about the risk of creating a dominant position." The Minister defended the breadth of the public interest criterion of the Act which guides the Monopolies Commission; it enabled contentious issues to be investigated by an independent body free from political pressures. He pointed out that the system was "essentially discretionary," designed, particularly in merger references, "to allow Ministers to take the decisions that seem to them right in the circumstances."

Complete predictability was not achievable under such a system and perhaps not desirable. But Mr Fletcher was concerned that "a pattern should develop and be traceable and that the decisions taken at any one time should not be regarded as capricious. It is the Government's intention to give as much guidance as possible to the market on the policy in particular cases, for example by giving brief reasons for decisions."

## Doubts

This would be a step in the right direction; a requirement to explain controversial decisions would impose a useful discipline on Ministers. But doubts remain both about the extent of discretion in the hands of the Secretary of State (who makes the final decision on references to the commission) and about the commission's terms of reference.

The Fair Trading Act obliges the commission to have regard to five specific factors, including

the desirability of maintaining competition, encouraging cost reduction and promoting the balanced distribution of industry and employment. In addition, the commission "shall take into account all matters which appear to them in the particular circumstances to be relevant." This catch-all phrase has led the commission to examine such issues as: the effect of a merger on the acquired company's efficiency; the effect on the balance of payments; the desirability of maintaining British ownership of a key company in a strategic industry; and the effect on employment in particular areas of the country.

## Considerations

The open-ended nature of these considerations makes it possible for virtually any criteria laid down in the Act to be referred to the commission. It also involves the commission in making judgments which are more appropriate for a management consultant than for a body concerned with competition. It is the vagueness of the criteria which leads to inconsistency and sometimes to split verdicts.

The nub of the matter is this. Is the Government prepared to confine its interference in the market to cases where there is a potential threat to competition or does it want a reserve power to override the market even when no question of competition arises? It seems that the present government, like its predecessors, wants such a power. If that is so, the least it must do is to constrain the power by a set of published guidelines and to use it very sparingly.

Ministers have to explain what sort of mergers they find objectionable and why; clearer guidance has to be given to the Office of Fair Trading and to the Monopolies Commission. Such instructions cannot cover every possible eventuality, but they should be precise enough to leave no question of the fog which has surrounded merger control in recent years.

The outcome of the current review should be to reaffirm the maintenance of competition as the primary goal of merger policy and to reduce to a minimum the intrusion of extraneous matters.

ONLY 20 miles from Manhattan, down on the tawdry New Jersey coast where oil storage tanks jostle for space with chemical works, the U.S. steel industry faces one of the numerous challenges that are now threatening to topple it permanently off its pedestal.

Perth Amboy is the site of a three-year-old mini mill launched just as U.S. steel demand was falling into the steepest decline it has known for 24 years.

Since then, the country's leading steel companies have slumped to the very bottom of the earnings cycle, running up mammoth losses that may have done lasting damage. But the Raritan River Steel Company has struggled through, earning a profit, servicing its very large debts—and taking more and more sales from the steel majors.

It is partly because of the success of plants like Raritan that two of the country's largest steel companies have taken the first steps towards the rationalisation of the industry that many consider inevitable. The proposed takeover of Republic by LTV is a deal which has the problems of big steel over the last 10 years written large all over it. Greatly weakened by the recession, the two groups have launched what is essentially a defensive merger.

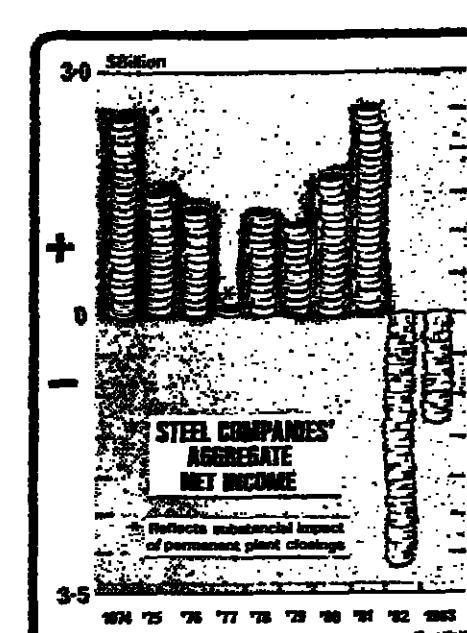
This is a feature of the project which may help to see it through the tough U.S. antitrust regulations. But it is also telling evidence of an industry that has been forced to cede so much ground to its competitors that its only alternative now is to seek out alliances and regroup on a different base.

"The big companies kept their prices high and gave up markets when sales were booming," says Mr William Shields, president of Raritan. "They are now stuck with old plants and facilities that were obsolete years ago. The only thing left for them is massive restructuring."

Although the Justice Department has not yet declared its hand, the consensus view is that the LTV-Republic merger will go through. If it does, it would represent a significant reversal of the conventional view of big steel's position in the U.S. economy. For years the major companies have carried the reputation of being so dominant that it was inconceivable that they could be allowed to come together and create even greater concentrations of interest.

It has become clear over the past couple of years, however, that this perception of the big steel companies is outdated. Even by the 1970s, they had run out of growth, as other materials were substituted for steel. Shipments became stuck on a plateau, and earnings, even in nominal terms during a period of rampant inflation, began to slip.

This steadily weakening structure has been shaken to its foundations by the slump. Within a year between 1981 and 1982, industry-wide profits sunk right through the floor from a peak of



STEEL COMPANIES' AGGREGATE NET INCOME  
(\$ billions) (Source: U.S. Steel Institute)

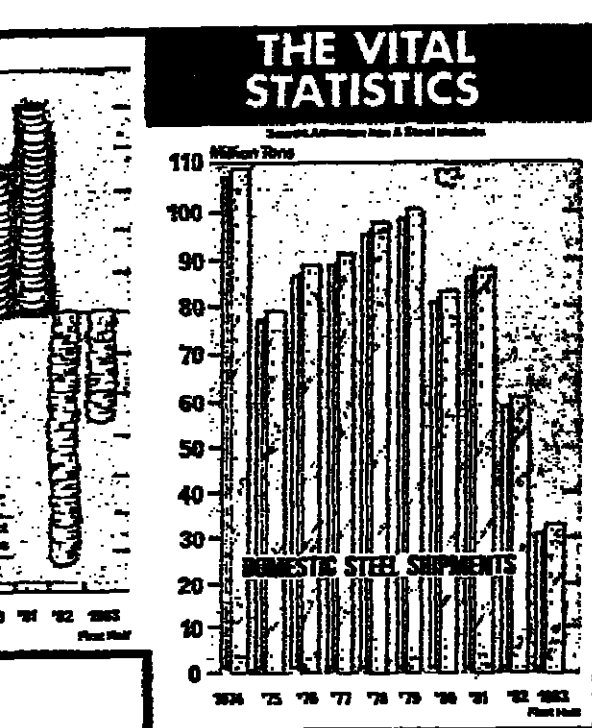
\$2.6bn to a horrendous loss of \$3.2bn. Steel output last year was driven to its lowest point since 1959, while shipments fell by 44 per cent to 62m tons, the worst figure for 24 years. And during this mayhem, the importers increased their share, pushing up sales to 27 per cent of the 1982 market—just about double the level at which they had stood 10 years previously.

Some of these figures are now beginning to crawl back to less horrific levels as the U.S. economy comes roaring off the bottom. But the underlying structural weakness of big steel remains.

Despite the enormous volume production of the U.S. industry—U.S. Steel, the giant of the sector, produces as much as the whole of France, and Bethlehem, the number two manufacturer, ships more than British Steel—they are operating from some of the most outdated plants in the world. Only 26 per cent of output is by continuous casting, against 86 per cent in Japan, and 9 per cent of capacity is still in open hearths.

Critics say that many of yesterday's showpieces integrated facilities are no longer effective as total units. "There are lots of superb facilities," says one consultant to the industry. "But often they do not link up with anything as efficient either up or downstream." The decline started in the 1950s, when some of the leading companies looked at and then backed away from big new investments in integrated works. The decision was probably a rational one in pure return on investment terms, but it marked the beginning of the slide from world leadership.

The U.S. companies gradually gave up any pretence of being world competitors—up until the early 1960s they had been net exporters—and turned increasingly to the soft home



Domestic steel shipments (million tons) (Source: U.S. Steel Institute)

market where strong demand and cosy established relationships with their large clients made for relatively easy pickings. "They forgot," says a critic, "that there was another world outside."

But they were not allowed to forget for long. What happened then was a kind of displacement of investment to Europe, where the big coastal sites became fashionable, to Japan,

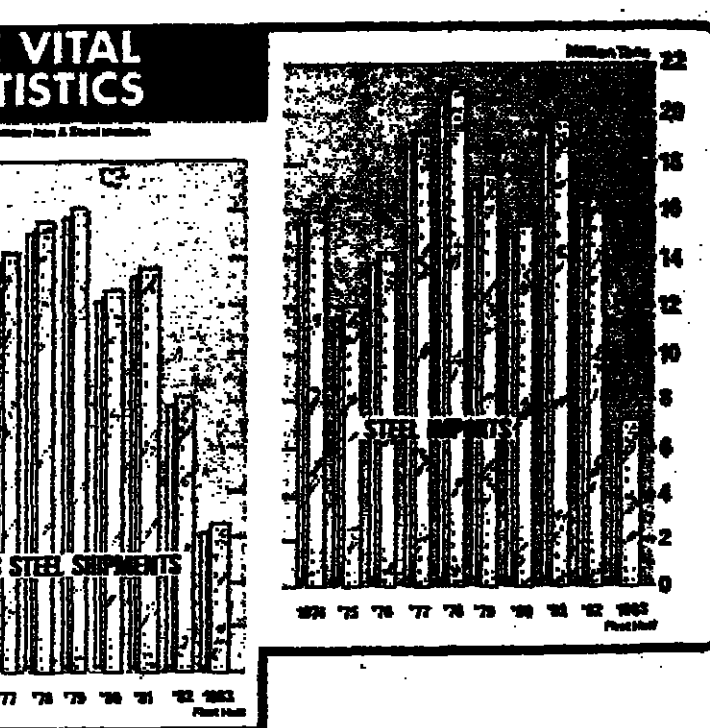
ing the imports and mini-mills on their own terms. The integrated majors responded by keeping prices high to maintain profits. The loss of market share was inevitable. They also failed to pump back enough of their profits into existing facilities, and they awarded what in retrospect were incomprehensible wage increases.

Rather than risk strikes, and further loss of market share, the steel companies allowed wages to soar by 317 per cent between 1967 and 1982, in a period when inflation rose by 170 per cent.

The U.S. manufacturers were hampered in fighting this trend by competitive investment of their own. A great deal of the new overseas capacity went in the form of subsidised loans. Yet similar plants in the U.S. might never have shown any return to shareholders at all.

"The basic problem is that it costs up to \$2,000 per annual ton of capacity to build a greenfield site," says Mr Tom Jones, a Cleveland-based consultant for Booz Allen. "But you ought to be aiming for a 25 to 30 per cent pre-tax return on capital, or around \$500 a ton, while steel sells for perhaps \$400 a ton. There is simply no profit in the product."

Nevertheless, despite these constraints, the industry's strategy in the 1970s provided its critics with plenty of ammunition. For example, instead of fight-



Domestic steel shipments (million tons) (Source: U.S. Steel Institute)

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ment—there are many in the industry who contend that the U.S. will increasingly become an importer of semi-finished product.

But until the recession came along, the basic problems were only being tickled—half-heartedly. In this sense, the last three years may yet prove to be of lasting benefit. They have finally forced the steel companies to bring out the big axe and wade into their problems head on, rationalising, cutting wages, brutally slimming down their labour forces and trimming their ambitions to a more realistic scale. In the process, employment has been chopped virtually in half from 483,000 in 1979 to 247,000 at the end of 1982.

The impact of these measures is already seeping through into the third quarter figures for the industry. Once the recovery spreads well into the capital goods sector, the lower cost base on which the industry is now working should generate a healthy increase in profits—indeed, Wall Street is already drawing up some buoyant forecasts.

Yet will this cyclical recovery be strong enough to pull the industry out of its structural nose-dive? Rationalisation of worked-out plant costs, money, and many of the steel companies can ill afford to spend it.

Bethlehem, the second largest of the majors, provides an example of these financial constraints. In 1982 it embarked on a \$1bn closure programme which, together with operating losses, left it with net worth more than halved at \$1.2bn. Already saddled with heavy debts, it is now arranging leasing type finance with a consortium of banks for an essential \$500m investment in two continuous casters.

With this kind of financial squeeze widespread in the industry, there is a growing feeling that a short-term earnings recovery will only be the first step towards putting steelmaking back on a healthy footing. Mr David Rodewick, chairman of U.S. Steel, voiced these fears at a recent hearing of the Senate Finance Committee, when he talked about a "state of accelerating self liquidation."

Mr Rodewick, who is also chairman of the American Iron and Steel Institute, put forward a three-point recovery plan that would mark a radical change in the old adversarial relationship between the steel barons and the Administration.

What the industry would like, he said, would be substantial tax concessions to draw forward investment credits, protective action under GATT to provide tariff shelter while it reorganises, and a waiving of anti-trust regulations to allow mergers.

The LTV-Republic merger proposal is the first head-on attempt to test the Government's willingness to allow such a wave of reconstruction to go ahead. If the Government gives the go ahead, it could be the first of several.

But even though it now looks as though the deal may be doomed—the two companies are apparently finding it difficult to agree on the financial arrange-

## Men &amp; Matters

## Merchant venturer

Barbara Thomas, the newest recruit to merchant banker Samuel Montagu's executive team, has been better known so far as a champion of U.S. investors rather than Wall Street's investment banks.

Since she first made her name, at the age of 34, as the youngest ever member of the U.S. Securities and Exchange Commission (SEC), the impeccably groomed Ms Thomas has been waging a constant fight for investors' rights, demanding less corporate secrecy and better service.

Her independent stance on several important SEC issues has won her widespread respect—though it may hardly endear her in some of the more secretive corners of the international merchant banking circuit.

She has been an outspoken critic of Rule 415, which allows companies to register securities with the SEC and then sell them in the future without the usual waiting period.

Ms Thomas has argued that the rule poses grave risks to investors and in fact, she is delaying her departure until next month so that she can take part in the final vote on the rule.

Apart from such domestic issues, Ms Thomas has pushed for greater access to data on illegal transactions being made through secret bank accounts in Switzerland.

She is a conservative Democrat on a Commission which is weighted in favour of the Republicans. She once told a reporter that, when she first joined the SEC, she was its most conservative member but "the Commission has moved so much toward the Right that I am now precisely in the centre."

But though she has often been at odds with those on her right, her departure is due to her lawyer husband's posting to Hong Kong where he is opening

a branch of his New York firm. Ms Thomas's major task as Montagu's first woman executive director, during the next three or four years will be to develop the bank's international corporate finance business in the Far East.

But she has also been given a desk in New York—as president of Samuel Montagu Holdings—and will help in planning Montagu's expansion in the U.S. market.

## Cabinet cuts

If the government wants to find out whether its cuts in local authorities' spending have started to register it need look no further than a diest of office equipment sales.

According to figures for the sales of filing cabinets published by MM Corporation Services, the cutback in local government departmental spending has been "particularly harmful" to filing cabinet sales.

However, there is still plenty of paper being shuffled about the bureaucratic system. Nearly 1m filing cabinets were sold last year in spite of the recession.

## Lucky numbers

Daily Express readers competing for cash prizes in "the world's richest newspaper game" seem to be faring rather worse so far than the journalists who have been quitting the newspaper.

"Who is this week's editor of the Daily Express?" a non-plussed Lord Matthews, chairman of Fleet Publications, was asked at last week's annual meeting.

"Do they work in an office or on a turntable?" the critic persisted, in a reference to the newspaper's 10 editors in 20 years.

The cost to the Express, according to his estimates, of this sort of turnover, would have gone a long way towards funding its "Millionaires Club."

His (unconfirmed) list of severance cheques paid out to departing journalists recently includes £150,000 to City editor Kenneth Fleet; £34,000 to his predecessor Roy Assersohn; £80,000 to Arthur Firth, editor 1980-81; and £100,000 to Christopher Ward, editor 1981-1983.

Sir Larry Lamb, who currently occupies the editor's chair, dismissed associate editor Felicity Green with a cheque for £60,000 and another £100,000 has gone to two foreign correspondents who need no longer correspond.

## Tickled pink

Imitation, they say, is the sincerest form of flattery. So when a new financial daily appeared on the news-stands in Israel, printed on a familiar pink paper, our man in Tel Aviv called the editors to offer his congratulations.

During the ensuing conversation, it emerged that the newspaper for the new Hebrew language paper comes from the FT's own supplier in Scotland. The new paper, Globes, joins Mahat, Yom Yom and Sha'ar, to bring to four the number of financial dailies in a country where just about everybody plays the stock market.

I wish the new publication well. It's a nice colour—same about the name.

## Portuguese pains

Attempts by the Government to trim spending in Britain's expensive National Health Service have provoked cries of rage from practitioners and patients alike.

"No, they're against the law here," replied the Russian. "Bejabers, you'd never get away with that in Ireland," said the trade unionist. "All our trade unions are run by Communists."

The Portuguese, it seems, are real gluttons for punishment. More than half of them are reported by state medical authorities to be too fat—the poor eat too many cheap starches,

while the rich simply eat and drink too much and do not take enough exercise.

Too much salt in local cooking also leads to high blood pressure, while the Portuguese are Europe's second biggest alcohol drinkers—after France, that is. Until this year there were no drunken driving laws in Portugal and over 3,000 people a year died outright on the roads.

For the doctors the style of life in Portugal adds up to a fearsome medical problem. With few general practitioners, the burden falls on the hospitals which last year handled more than 25m consultations.

From morning until evening each day Portuguese pharmacies are full of ladies armed with sheaves of prescriptions for ailments which they describe in alarming detail to a captive audience.

Recently one cleaning lady arrived at work with a shopping bag bursting with 16 different remedies costing altogether £30 for her kidney stones, gallstones, and other aches and pains.

With such paid-up enthusiasm for illness it is a wonder the Government does not nationalise on obvious boom business.

## Strike a light

Nobody tells better Irish jokes than the Irish Times. Its latest is one about an Irish trade unionist visiting the Soviet Union.

"This is a fantastic country you have here, never any strikes," he remarked to a Soviet official.

"No, they're against the law here," replied the Russian. "Bejabers, you'd never get away with that in Ireland," said the trade unionist. "All our trade unions are run by Communists."

Observer

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By Lynton McLain and Ian Rodger



## Airlines to act on blocked earnings

By Michael Dome in Delhi

THE WORLD airline industry is planning tougher measures in conjunction with governments to combat the growing problem of blocked airline earnings in many parts of the world - especially Africa.

These now amount to \$800m and the problem is getting worse, with \$1bn estimated as the likely total by the year end.

It was made clear yesterday at the annual meeting in Delhi of the International Air Transport Association (IATA) representing 124 leading world airlines, that, whereas a few months ago the problem appeared to be coming under control, with blocked earnings steadily being cut, in recent weeks there has been a reversal and the total has soared again.

Earnings are "blocked" when an airline earns cash by selling tickets in a foreign country that refuses to allow the airline to take the money out, and instead freezes it, in some cases even appropriating it for other uses as a valuable and virtually free source of foreign exchange.

Many airlines, especially those in Western Europe which fly to the most serious offenders, are becoming very worried about this situation and angry at the apparent inability or unwillingness of governments to overcome it.

Sir Adam Thomson, chairman of British Caledonian, told the meeting that it was "a problem for governments to solve, not the airlines. It is a fact that by not allowing a fair and reasonable flow of remittances to airlines, the governments of the countries concerned are breaking the treaty of an air services agreement."

But IATA is now ready to go even further than complaining to governments. It is openly talking for the first time of stopping flights to offending countries. After a particularly tough and outspoken meeting of the association's top policy-making executive committee in Agaña, near Doha, late last week, it now emerges that it was openly agreed that if the problem were not solved, "service disruptions" might easily occur.

The problem of blocked earnings can be properly assessed when the current estimate of \$800m is set against the industry's overall annual loss last year of \$1.5bn. If revenue losses of close to \$1bn through discounting - the sale of tickets worldwide at less than the official fares - are also taken into account, it becomes clear that by eliminating discounting and blocked earnings, the industry could revolutionise its financial situation very quickly.

Airlines battle to clear doldrums, Page 4

## Jaguar plans robotics joint venture

Continued from Page 1

Jaguar is expected to spend more than £50m during the next three years on new production methods. Much of the investment seems likely to qualify for grants under the British Government's Support for Innovation scheme, which can provide one third of the cash required.

Mr John Egan, the car maker's chairman, would not be drawn on the total investment involved, but disclosed that, so far, contracts for work worth £750,000 had been signed and had attracted provisional financial support under the Support for Innovation scheme.

That had enabled Jaguar, part of the state-owned B.I. group, to speed up the introduction of new techniques. "But we had no choice about making the investment. We have to put behind each of our workers money equivalent to the investment, our rivals put behind theirs."

## Sears Roebuck profits surge 73% in quarter

By Paul Taylor in New York

SEARS ROEBUCK, the world's largest general merchandise retailer group, which has been rapidly expanding its financial services business, yesterday reported a 73 per cent surge in third quarter earnings to new record levels.

The gain reflects a particularly strong performance by the merchandise division, and higher earnings from the Dean Witter Financial Services group and the Allstate Insurance group.

Sears said earnings for the quarter increased to \$288.8m, or 81 cents a share compared with \$168.7m or 48 cents a share in the same period last year on revenues which grew by 19 per cent to \$8.53bn from \$7.15bn.

Results for the quarter, and the nine months, have been adjusted to reflect the consolidation of Simpson-Sears of Canada after Sears lifted its stake in the company earlier this year from 40 per cent to 60.5 per cent. Excluding Simpson-Sears, revenues for the quarter increased by 10 per cent to \$8.25bn.

The latest results helped lift Sears' nine month earnings to \$759.5m or \$2.25 a share, against \$401.8m or \$1.15 a share in the same period last year.

Revenues for the nine months, including Simpson-Sears, increased by 18.5 per cent to \$25.07bn, and by 8.4 per cent to \$23.14bn, excluding the Canadian company, from \$21.15bn in the 1982 period.

Results for the latest quarter and nine months were lifted by capital gains of \$4.7m after tax in the latest quarter and \$56.2m in the nine months, compared with a \$20.3m after tax loss in the year ago quarter and \$30.9m in the 1982 nine months.

Mr Edward Telling, chairman and chief executive, said strong performance by the company's merchandise, insurance, real estate and financial services groups contributed to the earnings improvement. He noted that operating income for the third quarter totalled \$378.1m against \$238.4m last year and \$965.3m compared with \$343.4m for the nine-month period.

A substantial part of the gain is attributable to the general merchandise group which reported income for the latest quarter of \$156.5m, a 126 per cent increase over the \$70.3m in 1982 quarter.

This was attributed to improved sales, continued expense controls and lower effective interest rates. Third quarter revenues increased by 21.4 per cent to \$8.19m.

The Allstate Insurance group also reported a significant income gain of \$148m in the quarter, against \$122.8m last year on revenues of \$8.01bn compared with \$5.53m.

Perhaps the most dramatic and surprising results came from the Dean Witter Financial Services group. While other financial services groups and the Wall Street firms in particular, have been struggling to maintain earnings, the Sears group reported income of \$20.4m, compared with \$12.4m last year on revenues of \$305.2m, against \$41.5m.

## Getty Oil wins protection pact against unwelcome takeovers

By William Hall in New York

GETTY OIL, the 14th largest U.S. oil company, has signed a one year agreement with the two biggest shareholders, who have agreed not to sell their shares during the term of the agreement.

The agreement with the Sarah C. Getty trust and the J. Paul Getty Museum, which together control 52 per cent of Getty Oil, is the latest example of the efforts by major U.S. oil companies to protect themselves against unwelcome takeovers. Getty Oil's name has been mentioned regularly over the past year as a possible takeover candidate.

Gulf Oil, which earlier this month announced plans to form a new Delaware holding company in an effort to protect itself from disruptive action by minority shareholders, is currently being pursued by a group of investors led by Mesa Petroleum, an aggressive Texas oil company which has a reputation for investing in the undervalued stocks of fellow oil companies.

Mesa announced yesterday that it had increased its stake in Getty Oil to 17.9m shares, equivalent to 10.8 per cent of the company's equity. Its purchases so far have cost \$701m and it has said that it is willing to spend up to \$1.1bn on Gulf Oil shares. Trading in Gulf shares has been unusually heavy over the last couple of months, and last Friday a 2.5m block of Gulf Oil shares changed hands for \$118.1m, making it the third biggest ever transaction on the New York Stock Exchange.

Mr T. Boone Pickens, the chief executive of Mesa, who is masterminding the stalking of Gulf, warned yesterday that while the investor group has not decided what action it will take, "it cannot be assumed that the investors will be passive."

Mr Pickens also said that the initial reaction to Gulf's proposals to set up a new Delaware holding company is that it "would be disadvantageous to Gulf's shareholders." Accordingly the investors presently intend to vote against the proposal as they now understand it. The Mesa investor group is now the single biggest shareholder group in Gulf and is followed by Mellon Bank, which owns 6.7 per cent.

Mesa has lined up credit lines with its bankers to help it finance its purchase of Gulf oil shares. Mesa noted that certain banks have determined not to participate in the credit commitment under Mesa's revolving credit agreement and that such bank's commitments have been replaced by banks which have increased their participation and by the inclusion of one additional bank.

The Getty Oil agreement which was signed last week, provides that fundamental corporate changes will be effected only with the agreement of the company, the trust and the museum. In addition Getty Oil's board will be increased from 12 to 17 members. One new member will be designated by the J. Paul Getty museum, which controls 11.8 per

cent of the stock, and the other four are to be selected by the trust, which owns 40.2 per cent of the Getty stock, and must be acceptable to the company and the museum.

Getty yesterday reported marginally higher third-quarter earnings of \$183.7m. Its revenues dipped from \$3.1bn to \$2.9bn, as earnings per share rose from \$2.28 to \$2.32.

Standard Oil of Indiana, the sixth biggest U.S. oil company, reported a 5 per cent increase in net third-quarter earnings to \$394m.

The improvement was attributed primarily to better refined product margins and higher earnings from chemical operations which have rebounded from previously depressed levels. Higher crude oil and condensate production volumes overseas also boosted earnings but were to some extent offset by lower crude oil prices and reduced natural gas demand.

The group's third quarter results include a \$45m provision for the loss on the sale of surplus tankers. However, this was largely offset by a net benefit of \$30m from the drawdown of inventories valued under the last-in first-out method (LIFO) and disposal of U.S. fertilizer and pesticide operations.

Ashland Oil, one of the biggest independent refiners, reported a \$24.7m drop in its final quarter net income to \$51.7m. Last year's figures had been boosted by a \$48.6m pre-tax gain on the liquidation of inventories and a tax credit.

## Apple sharply lower in quarter

By Paul Taylor in New York

APPLE COMPUTER, the once fast-growing U.S. personal computer maker now facing fierce competition from other manufacturers including International Business Machines (IBM), yesterday reported sharply lower fourth-quarter profits. However, it still managed to post a 25 per cent earnings increase for its fiscal year.

The company said its fourth-quarter earnings ending September 30 fell to \$3.1m or 32 cents a share from \$3.7m or 38 cents a share in the same period last year on sales which nevertheless increased from \$175.8m to \$273.2m.

The sharp reversal in Apple's profitability is apparent from the full-year figures which, despite the poor fourth quarter, increased to \$17.7m or \$1.28 a share from \$61.4m or \$1.06 a share on net sales which soared by 19 per cent to \$982.6m from \$583.1m.

Apple's poor fourth-quarter results had been widely expected following warnings last month from Mr John Sculley, Apple's recently-appointed president and chief executive officer, that earnings would be hit by market conditions and special write-offs. That prompted a sell-off of Apple stock, with more than a quarter of the California-based company's market capitalisation being wiped out in a single day.

Since then Apple's stock has continued to be bedeviled by growing concern on Wall Street about a "shake-out" in the industry. Yesterday Apple's shares were trading at around \$19, down 50 cents since the close on Friday, compared with \$22 just four months ago.

Mr Sculley, who joined Apple in May from PepsiCo, said of the results yesterday: "As previously announced, in the fourth quarter market conditions and several strategic decisions which were made to strengthen the company caused a reduction in earnings from the third quarter of fiscal year 1983 and the fourth quarter of fiscal year 1982."

The factors affecting fourth-quarter earnings included write-offs associated with the transfer of the manufacture of the Lisa computer to volume plants in Dallas, Texas, and Cork, Ireland, and earlier this month Apple laid off 40 per cent of the workforce at its plant in Carrollton, Texas, because of flat sales of its Apple IIE computer.

Warner Communications has delayed the production and marketing of its two higher-priced Atari computers, the RPNPKL and the 1450 XL. The decision, following losses of more than \$300m in the Atari unit so far this year, is seen as a reaction to the expected launch in the next few weeks of IBM's much heralded PCjr computer.

The agreement was hammered out after 10 days of intensive negotiations. Mr Schmitter had warned that if there was no deal by the beginning of this week he would call an election.

But the Government may have won only a short breathing space. The opposition social democrats are pressing for an early debate, possibly on November 3, on the issue of Nato deployment of medium range missiles in Europe. On this occasion, the Radicals are expected to join the socialist parties in criticising the Government's continued support for Nato's 1979 twin track decision, which could precipitate a new Government crisis.

Yesterday's economic policy deal means that planned 1984 budget improvements (both cuts in spending and increases in revenue) totalling Dkr 10bn (\$1.1bn) have been reduced to Dkr 7.8bn, but the Government promises to make the figure up to Dkr 10bn by finding new spending cuts later. Finance Minister Henning Christophersen said the deal will bring the budget deficit down from about Dkr 62bn in 1983 to just under Dkr 60bn next year.

One major item to be dropped was the Government's proposal to make the wealthiest 20 per cent of the population pay for some medical services.

## THE LEX COLUMN

### Dial Telerate for Reuters

The dollar may still be a favourite financial refuge at moments of uncertainty, but yesterday's response to the weekend's tragedy in Beirut was muted. There was a degree of early gloom on Wall Street, reflecting a worse turn in the M1 statistics, but things seemed more cheerful when the market had excellent third quarter results under its belt from General Motors and Sears.

#### Telerate

Anyone closely monitoring the value of Reuters ahead of its flotation was picking up some interference from a foreign station yesterday as Telerate announced an 80 per cent jump in its net income for the year to September, to \$20m. Reuters screens showing a 15bn price tag for the coming offer attracted particularly heavy static, but it might be a little premature for viewers to adjust their sets.

Telerate has not raised its rental charges for three years and a remarkably consistent, fast growth rate has been built on the aggressive expansion of its network. Of 11,200 sets installed in September, about 3,000 are outside the U.S. and there is no doubting the potential for Telerate internationally. Since Exco acquired control of the company in June, Telerate appears to have injected rather more urgency into the non-U.S. marketing efforts of its 49.9 per cent owned joint venture with AP Dow Jones.

With no borrowings and cash just over \$70m at present, Telerate's balance sheet should have no problems funding the hardware required. Net income of perhaps \$23m for calendar 1983 could grow to \$33m or more next year.

At \$4.45 per share, the latest 12 months' earnings have been only slightly diluted by the 4m new shares issued in May, which raised \$80m cash. Telerate's shares still stand around \$20 each, implying a multiple of 42 on an actual tax basis.

Applying the same valuation to Reuters on the basis of an estimated \$35m pre-tax profit for this year produces a capitalisation of over £1.2bn. But the market will surely demand some discount from the Reuters shares to take account of the group's other less exciting activities.

There seems no reason, though, why Telerate's own success should cast a shadow over Reuters: the two networks provide far from identical services and their rivalry looks a powerful catalyst for the aggregate market.

#### Tate & Lyle

When Tate & Lyle set the seal on its financial rehabilitation with last month's rights issue, one skeleton was still rattling noisily in the cupboard. Zymaze, the Canadian high fructose corn syrup producer, was the one clear reminder of Tate's earlier history of commercial misadventure.

In its brief six-year history, everything that could have gone wrong with Zymaze has. Construction costs overran, teaching problems developed and the depressed world sugar price made the product hopelessly uncompetitive on the Canadian market. Even now, the sugar price would need roughly to double for Zymaze to make money at the pre-tax level.

The problems loomed even larger for Redpath Industries, the 51 per cent owned Tate subsidiary which holds the half share in Zymaze. So the proposed deal by which Redpath will hand over its stake gratis to John Labatt, the other Zymaze partner, looks sensible for all concerned.

Tate will take an extraordinary write-off of £1.5m, but, in exchange, will be shot of consolidated losses which totalled around £34m pre-tax in the year to September 1983, and of debt amounting to about £33m. The effect should be to

leave Tate's balance sheet virtually unencumbered, a far cry from the dark days of 1976 when borrowings totalling up to £115m.

Net worth in the September balance sheet should be not far short of £300m, so Tate now has room for an acquisition in the £100m plus bracket. Recently the company has been winning lawsuits almost all round - yesterday the shares rose another 10p to 354p - but its biggest test lies ahead.

#### Bibby

Bibby has squeezed out some remarkably favourable terms on which to make its exit from the oil business for about £14m, close to net asset value and probably not far short of twenty times last year's net earnings.

Overcapacity in the UK, where the whole refining industry has been running at around 70 per cent of its technically possible output, has combined with the availability of low cost imports from the EEC to depress crushing margins in the last few years. Bibby has now decided that this is an erratic activity in which the likely returns do not justify the necessary investment.

Bibby's decision must have been hastened by the emergence of a new competitive combination earlier this year, forcing Bibby to choose between building up its own market position (at considerable cost) or finding a way out. This has now been provided by Bunge, an international company with large enough resources to take on this expensive challenge.

The deal takes Bibby's balance sheet into net cash, adding to the scope for investment in areas where the return is nearer to the 24 per cent achieved in Bibby's other businesses last year than the 8 per cent gleaned from oil, the shift away from agriculture will surely accelerate.

## ADVERTISEMENT

### COMPUTERS

#### Argus naval data link

The Royal Navy has selected Ferranti Computer Systems to develop and manufacture prototype Data Link Processor (DLPP). These will be based on the Ferranti Military Argus Compact (MAC) computer. By providing the data link function with a dedicated front end computer, the DLPP will remove a major part of this function from the AIO/CIC system processor and enable easier implementation of enhancements and modifications.

### OIL PRODUCTION

#### Measuring the flow

The R M Parsons Company Limited has signed a contract with Ferranti Data Systems Group for the supply of tele-control equipment for use on the Mossorroa oilfield. The complex operated by Shell Esso.

A pipeline conveys various natural gas liquids from the gas-liquorating plant at Mossorroa in Fife, to the terminal at Braefoot Bay on the Firth of Forth, for loading on to sea-going tankers. Ferranti is installing M2.5 telecontrol equipment at both sites to monitor plant status, such as valve positions, and performance parameters such as pressure, temperature and flow. Information will be passed to control centres at both ends of the pipeline for use in the process computer and for display on alarm diagrams so that both centres will have full information regarding the operation, status and integrity of the complex.

### TELEPHONES

#### £1m exchange for ICI

A Ferranti GTE computer-controlled PABX (Private Automatic Branch Exchange) has been installed at ICI, Billingham, Teesside. Installation value is around £1m and the GTE-4500 digital PABX provides 3,300 extensions. The system has greatly improved the site's communications efficiency and enables

customers calling in to go directly to the extension handling their account. This facility also helps relieve the switchboard operators of the more tedious routine work allowing more time to help new customers whilst saving time and call charges for existing clients.

## World Weather

Area	C	F	Area	C	F	Area	C	F	Area	C	F
Algeria	15	59	Belgium	16	61	Malaga	17	63	Seville	12	54
Amman	24	76	Brussels	15	59	Marseille	18	64	Stuttgart	10	50
Antwerp	11	52	Frankfurt	12	54	Munich	10	50	Vienna	10	50
Athens	18	64	Geneva	10	50	Naples	15	59	Zurich	10	50
Bombay	28	82	London	10	50	Palermo	18	64			
Buenos Aires	24	76	Madrid	12	54	Rome	15	59			
Calcutta	28	82	Paris	10	50	Sofia	15	59			
Cairo	24	76	Stockholm	10	50	Tripoli	15	59			
Chennai	28	82	Taipei	15	59	Tunis	15	59			
Columbo	28	82	Tokyo	15	59						
Dacca	28	82	Washington	10	50						
Delhi	28	82	Wellington	10	50						
Dhaka	28	82									
Hong Kong	28	82									
Kuala Lumpur	28	82									
London	10	50									
Los Angeles	10	50									
Manila	28	82									
Mexico City	28	82									
Moscow	10	50									
New Delhi	28	82									
New York	10	50									
Osaka	15	59									
Paris	10	50									
Rangoon	28	82									
Reykjavik	10	50									
Rio de Janeiro	28	82									
Sao Paulo	28	82									
Seoul	15	59									
Shanghai	15	59									
Singapore	28	82									
Sofia	15	59									
Taipei	15	59									
Tokyo	15	59									
Tripoli	15	59									
Tunis	15	59									
Ulaanbaatar	10	50									
Washington	10	50									
Wellington	10	50									
Yokohama	15	59									

## Soviet missile plan

Continued from Page 1

lowed a meeting in Prague between leaders of the two new host nations, Herr Erich Honecker, of East Germany, and President Gustav Husak, of Czechoslovakia. It was presented as being "in accordance with an understanding reached by the governments of the Soviet Union, the German Democratic Republic and Czechoslovakia."

In practice, these are the two Warsaw Pact countries with the highest concentration of Soviet forces on their soil. They enjoy the least autonomy in military matters. Neither Poland nor Hungary was mentioned in the Moscow statement, although they too form part

of the Soviet Union's defensive cordon. Romania has actually refused to step up military spending and has called for missile reductions by both East and West.

Dissent has also been expressed in other East European countries, including East Germany itself, where the main Communist Party newspaper, Neues Deutschland, this weekend prominently carried a letter from an East German Protestant group in Dresden.

The letter said the signatories were "dismayed" by the prospect of missiles also being deployed on East German territory.







## INTERNATIONAL COMPANY NEWS

## North American quarterly results

AMERICAN CYANAMID

Third quarter	1983	1982
Revenue	\$89.5m	\$91.2m
Net profit	\$1.1m	\$1.1m
Net per share	0.34	0.36

NINE MONTHS

Revenue	\$261m	\$261m
Net profit	\$11.2m	\$11.2m
Net per share	2.23	2.33

CANADA PACKERS

Third quarter	1983	1982
Revenue	\$1.2m	\$1.2m
Net profit	\$0.3m	\$0.3m
Net per share	0.37	0.34

NINE MONTHS

Revenue	\$3.1m	\$3.1m
Net profit	\$0.8m	\$0.8m
Net per share	0.85	0.82

CORNING GLASS WORKS

Third quarter	1983	1982
Revenue	\$73.1m	\$73.1m
Net profit	\$2.2m	\$2.2m
Net per share	1.06	1.06

NINE MONTHS

Revenue	\$221m	\$221m
Net profit	\$75.9m	\$75.9m
Net per share	3.60	3.60

QAF

Third quarter	1983	1982
Revenue	\$18.5m	\$18.5m
Net profit	\$0.9m	\$0.9m
Net per share	0.43	0.43

NINE MONTHS

Revenue	\$59.7m	\$59.7m
Net profit	\$12.5m	\$12.5m
Net per share	0.72	0.72

GENERAL SIGNAL

Third quarter	1983	1982
Revenue	\$82.4m	\$82.4m
Net profit	\$1.9m	\$1.9m
Net per share	0.70	0.70

NINE MONTHS

Revenue	\$244m	\$244m
Net profit	\$5.3m	\$5.3m
Net per share	2.10	2.10

## IC INDUSTRIES

Third quarter	1983	1982
Revenue	\$55.3m	\$55.3m
Net profit	\$1.8m	\$1.8m
Net per share	0.90	0.90

NINE MONTHS

Revenue	\$161m	\$161m
Net profit	\$4.3m	\$4.3m
Net per share	1.91	1.91

McGRAW-HILL

Third quarter	1983	1982
Revenue	\$34.5m	\$34.5m
Net profit	\$0.7m	\$0.7m
Net per share	0.70	0.70

NINE MONTHS

Revenue	\$103.7m	\$103.7m
Net profit	\$2.7m	\$2.7m
Net per share	1.79	1.79

MACMILLAN

Third quarter	1983	1982
Revenue	\$142.5m	\$142.5m
Net profit	\$13.8m	\$13.8m
Net per share	1.45	1.45

NINE MONTHS

Revenue	\$414m	\$414m
Net profit	\$33.2m	\$33.2m
Net per share	2.00	2.00

MORTON THOMAS

Third quarter	1983	1982
Revenue	\$47.3m	\$47.3m
Net profit	\$2.8m	\$2.8m
Net per share	1.75	1.75

NINE MONTHS

Revenue	\$142.5m	\$142.5m
Net profit	\$13.8m	\$13.8m
Net per share	1.45	1.45

NORTH AMERICAN PHILIPS

Third quarter	1983	1982
Revenue	\$94.5m	\$94.5m
Net profit	\$2.8m	\$2.8m
Net per share	1.91	1.91

NINE MONTHS

Revenue	\$280m	\$280m
Net profit	\$21.1m	\$21.1m
Net per share	1.82	1.82

OWENS-CORNING FIBERGLAS

Third quarter	1983	1982
Revenue	\$74.5m	\$74.5m
Net profit	\$2.8m	\$2.8m
Net per share	1.91	1.91

NINE MONTHS

Revenue	\$220m	\$220m
Net profit	\$21.1m	\$21.1m
Net per share	1.82	1.82

PASTY BREWING

Third quarter	1983	1982
Revenue	\$227.7m	\$227.7m
Net profit	\$2.5m	\$2.5m
Net per share	0.41	0.41

NINE MONTHS

Revenue	\$691.1m	\$691.1m
Net profit	\$5.3m	\$5.3m
Net per share	0.47	0.47

## PACIFIC GAS AND ELEC.

Third quarter	1983	1982
Revenue	\$1.8m	\$1.8m
Net profit	\$0.7m	\$0.7m
Net per share	0.74	0.74

NINE MONTHS

Revenue	\$5.7m	\$5.7m
Net profit	\$1.8m	\$1.8m
Net per share	2.22	2.22

PRIZEM

Third quarter	1983	1982
Revenue	\$95.5m	\$95.5m
Net profit	\$2.8m	\$2.8m
Net per share	0.88	0.88

NINE MONTHS

Revenue	\$273m	\$273m
Net profit	\$27.5m	\$27.5m
Net per share	2.01	2.01

PPG INDUSTRIES

Third quarter	1983	1982
Revenue	\$32m	\$32m
Net profit	\$0.6m	\$0.6m
Net per share	1	1

NINE MONTHS

Revenue	\$97.2m	\$97.2m
Net profit	\$16.5m	\$16.5m
Net per share	2.38	2.38

ROHM AND HAAS

Third quarter	1983	1982
Revenue	\$58.7m	\$58.7m
Net profit	\$10.1m	\$10.1m
Net per share	1.24	1.24

NINE MONTHS

Revenue	\$144m	\$144m
Net profit	\$10.5m	\$10.5m
Net per share	4.22	4.22

ROWAN COS

Third quarter	1983	1982
Revenue	\$48.2m	\$48.2m
Net profit	\$2.1m	\$2.1m
Net per share	0.13	0.13

NINE MONTHS

Revenue	\$170.1m	\$170.1m
Net profit	\$16.5m	\$16.5m
Net per share	0.58	0.58

SANTA FE IND

Third quarter	1983	1982
Revenue	\$18.5m	\$18.5m
Net profit	\$0.9m	\$0.9m
Net per share	0.73	0.73

NINE MONTHS

Revenue	\$56.5m	\$56.5m
Net profit	\$2.8m	\$2.8m
Net per share	1.88	1.88

Q.D. SEARLE

Third quarter	1983	1982
Revenue	\$291.2m	\$291.2m
Net profit	\$3.8m	\$3.8m
Net per share	0.80	0.80

NINE MONTHS

Revenue	\$861.5m	\$861.5m
Net profit	\$7.4m	\$7.4m
Net per share	1.52	1.52

## SQUARE D

Third quarter	1983	1982
Revenue	\$302.5m	\$302.5m
Net profit	\$1.3m	\$1.3m
Net per share	0.84	0.84

NINE MONTHS

Revenue	\$942.5m	\$942.5m
Net profit	\$17.1m	\$17.1m
Net per share	1.30	1.30

TANDY

Third quarter	1983	1982
Revenue	\$583.4m	\$583.4m
Net profit	\$9.6m	\$9.6m
Net per share	0.57	0.57

NINE MONTHS

Revenue	\$1,715m	\$1,715m
Net profit	\$33.7m	\$33.7m
Net per share	1.78	1.78

TECHNICON

Third quarter	1983	1982
Revenue	\$68.4m	\$68.4m
Net profit	\$0.6m	\$0.6m
Net per share	0.61	0.61

NINE MONTHS

Revenue	\$220m	\$220m
Net profit	\$23.6m	\$23.6m
Net per share	1.78	1.78

TYSON

Third quarter	1983	1982
Revenue	\$291.2m	\$291.2m
Net profit	\$3.8m	\$3.8m
Net per share	0.80	0.80

NINE MONTHS

Revenue	\$861.5m	\$861.5m
Net profit	\$7.4m	\$7.4m
Net per share	1.52	1.52

U.S. MOORE

Third quarter	1983	1982
Revenue	\$297.3m	\$297.3m
Net profit	\$7.7m	\$7.7m
Net per share	0.22	0.22

NINE MONTHS

Revenue	\$867.5m	\$867.5m
Net profit	\$25.9m	\$25.9m
Net per share	0.75	0.75

WESTERN AIRLINES

Third quarter	1983	1982
Revenue	\$320m	\$320m
Net profit	\$16.7m	\$16.7m
Net per share	0.73	0.73

NINE MONTHS

Revenue	\$971.5m	\$971.5m
Net profit	\$24.8m	\$24.8m
Net per share	1.87	1.87

## Static first-half sales and lower profits for Dai'ei

BY YOKO SHIBATA IN TOKYO

DAI'EI, Japan's largest supermarket chain operator, suffered a 14.4 per cent setback in pre-tax profits to ¥7.01bn (\$30m) in the half year to August with net profits down 19.1 per cent to ¥3.19bn. The downturn is blamed on slow sales and a higher interest burden.

Sales were just 0.9 per cent higher at ¥808bn. Turnover of food, clothing and furniture was below last year's levels and the marginal overall growth came from inter-group sales.

However, sales to group companies reduced gross profit margins and higher interest payments, resulting from the purchase of a Hawaiian shopping centre, also hit profits.

During the half year, Dai'ei lost ¥6.2m on the sale of 8.38m shares in the Crown company and ¥1.9bn on the revaluation

of inventories. However, there were also ¥9.2bn of special profits on the sale of property.

Dai'ei hopes to achieve its full-year sales target of ¥1.26bn compared with ¥1.23bn in 1982-83 with the help of three new outlets and the repurchasing of five stores. Thanks to sales of property and trimming of inventories, interest-bearing liabilities had been cut by ¥42bn as at the end of August compared with the end of February. A reduction in national interest rates will also lessen the interest burden and Dai'ei expects full year pre-tax profits of ¥15bn against ¥13.5bn last time. The dividend total for the year will be pegged at ¥16.50 per share including an unchanged interim payment of ¥8.25.

● IWATSU ELECTRIC, the leading Japanese manufacturer

## Australia to relax SE broking restrictions

By Michael Thompson-Hall in Sydney

THE AUSTRALIAN Associated Stock Exchanges (AASX) is preparing to introduce big changes to its membership rules by next March, the Trade Practices Commission (TPC) was told yesterday.

One of the main proposals is to allow outside interests to acquire up to 50 per cent of the voting shares in member firms, the AASX said. There will be no limitation on the number of new member organisations other than those imposed by the capacity of the exchanges' facilities. It added.

However, it is not prepared to welcome banks or life insurance companies into the fold.

A month ago Mr Ron Berman, the TPC chairman, told the stock exchanges' chairman, Mr Ian Roach, that he wished to see substantial changes to present membership rules. "Existing restrictions on the activities of stockbroking partnerships or corporations will be relaxed substantially," Mr Roach promised yesterday.

Eventually, all brokerage rates will be unified. Previously, the exchanges had argued that unified fees would produce undesirable structural changes, leading to fewer brokers and a draining of funds away from the smaller exchanges—Brisbane, Adelaide, Perth, and Hobart.

The TPC maintained successfully that unified rates would benefit all investors and improve the industry's efficiency.

## Monarch sues Jabiru stake

BY OUR SYDNEY CORRESPONDENT

MONARCH PETROLEUM, of Perth, has launched legal proceedings in the Western Australian Supreme Court seeking reinstatement as one of the registered holders of an oil exploration area in the Timor Sea that was recently the scene of the Jabiru 1A oil strike.

Weeks Australia, which has a 10.3 per cent interest in the Jabiru lease area, said yesterday it had received a summons that also listed Sico Australia Petroleum (18.75 per cent),

Norcen International (12.5 per cent), Ampol Exploration (6.25 per cent), and Brenda Mines and Noranda Australia (1.09 per cent each).

The Jabiru find is thought to contain at least 200m barrels of recoverable oil, with the prospect of significant additional reserves nearby.

Errol Hill, Executive, as operator, has a 50 per cent stake in Jabiru, which is not contested by Monarch.

Monarch is part of Magnet Metals, which is run by two Perth businessmen, Mr Alan Burns and Mr Derek Gascoigne.

Weeks Australia said yesterday it denies and will oppose Monarch's claims. Weeks said that a deed dated May 9 had assigned Monarch's former 30 per cent stake in permit area NT-P25 to Weeks and the other permit holders after Monarch failed to meet financial obligations in relation to the permit. It said Monarch itself prepared and executed the deed.

## Malaysia may agree to inquiry into BMF loans

BY WONG SULONG IN KUALA LUMPUR

DR. MAHATHIR, the Malaysian Prime Minister, indicated at the weekend that the Government may agree to the setting up of a Royal Commission of Inquiry into the scandal of loans made by the state-owned Bank Bumiputra to property companies in Hong Kong.

The move would follow mounting public pressure—coming even from large sections of Dr Mahathir's own ruling United Malays National Organisation. Last week, two chief ministers from the UMNO party, joined Mr Lim Kit Siang, the opposition leader, in demanding a full investigation.

Dr Mahathir said that the Government might set up a public inquiry, or publish a White Paper on the Hong Kong loans affair. The last time a White Paper on a financial scandal was published was in 1978, relating to a multi-million dollar loss by Bank Rakyat, a co-operative bank.

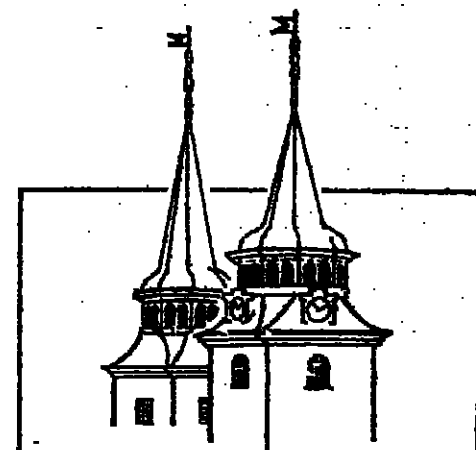
Dr Mahathir also reiterated that he still held Tan Sri Kamarul Ariffin, the former Bank Bumiputra chairman, responsible for the estimated US\$850m lent out to Hong Kong property companies including the now failed Carrian group by Bumiputra Malaysia Finance (BMF), the bank's subsidiary in the colony.

Tan Sri Kamarul met the Premier last Friday to explain how he had no knowledge that two bank directors had authorised the loans. Tan Sri Kamarul has also welcomed a public inquiry to free him from the legal constraints regarding bank secrecy to answer various charges made against him.

● The Malaysian Government has imposed a 0.1 per cent stamp duty on transactions between foreign and local stock brokers to encourage foreign investors to deal directly with Malaysian brokers. The new tax, introduced in the budget, will take effect from January 1

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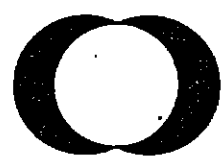
These securities have been sold outside the United States of America and Japan. This announcement appears as a matter of record only.

## NEW ISSUE

24th October, 1983

## Konishiroku Photo Industry Co., Ltd.

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## TECHNOLOGY

## Programme plans for cable television

## Video &amp; Film

BY JOHN CHITTOCK

IN THE last two weeks, scores of businessmen have been under interrogation behind closed doors—the contenders for Britain's first new cable TV stations. Along with the sweaty handshakes have come some weighty documentation (and in at least one case—probably more—a video programme) detailing plans for each station if the contenders are successful.

An examination of three of these presentation documents (openly passed to the applicants, not found in the tax) fills in many of the missing details about cable TV which until now have been the subject of so much speculation.

The three presentations relate to very different areas: Coventry, Swindon and the City of Westminster in London. Applicant for the first is Coventry Cable (a consortium of British Telecom, Thorn EMI and Merca Radio); the second—Swindon Cable Services—is wholly Thorn EMI/Radio Rentals; the third originates from one of three contenders for the West End area of London—Westminster Cable Company (a consortium involving various names, including British Telecom, Kleinwort Benson, Plessey and a UK subsidiary of American Television and Communications). Also competing for this last area are Eagle Investments and London West End Cable.

Westminster Cable divide their programme proposals into three tiers—Basic, Super Basic and Premier. The first tier costs about £7 (excluding VAT), the second a further £2, the third offers four channels at prices ranging from £3 to £7 per channel. In addition, a batch of seven further channels is reserved for interactive services, charged at varying rates—with spare capacity for DBS when it begins in Britain. A customer requiring the complete range, apart from specialty-charged services such as for business use, might thus face a monthly bill of about £30 (excluding VAT) but as little as £7 for the basic service.

The Basic Tier proposes 14 channels as follows: BBC1, BBC2, ITV1, Channel 4, BBC-DBS, out-of-region ITV, family entertainment (drama, children's, comedy, etc.), lifestyle (health, games, family features, etc.), children's programmes, programme guide, Prestel, shopping, community access channel and FM radio (this one will pull in foreign broadcasts of interest

kind at its Martlesham research centre, and the service can provide facilities as varied as a huge picture reference library to a programmed learning system.

Thorn EMI raise the possibility of using on one feature film channel a scrambled down-loading system to "deliver" films to customers' VCRs during the early hours of the morning—an idea which ABC in the U.S. are trying out via broadcast television under the name Telefirst.

Some intentions remain a little blurred. When, for example, an operator refers to a music channel—most comprising pop video—how many hours per day will be new programming, how many repeats? In most cases, a channel is likely to run for 12 hours, with anything from four to eight hours of material being repeated.

Since there are many cable networks in Britain already operational under existing legislation, the expansion of established services will begin in 1984, albeit limited by the small channel capacity of present installations. The new stations, largely based on fibre optics, will generally start to come on stream in 1985.

Many radio words have been spoken and written about cable in Britain, not least just two weeks ago by Mr. Alasdair Milne, Director General of the BBC, at a Royal Television Society dinner. But when the programming possibilities appear in print as a long list of up to 30 channels, it becomes easier to appreciate that cable will provide such a variety of distractions or attractions that comparisons with TV as we know it now could be pointless.

If cable TV in Britain succeeds it will be through its provision of the specific and identifiable. The fear that British viewers will indulge in "channel hopping" may be groundless if BBC and ITV can maintain their generality of excellence and if cable is obliged—by the new Cable Television Authority—to become a dedicated service.

In an ideal world cable TV could enhance the television experience instead of competing with it. Whether or not it will, may depend, in the end, on whether the operators can make a profit without pleading for freedom to do whatever they wish to avoid making a loss.

For example, Westminster Cable's interactive channels include a proposal to use banks of LaserVision video disc players any one of which a viewer can call up to access its disc as if the player was in his own home—eg, still frames, slow motion, indexed picture search. British Telecom has an experimental installation of this

## SCICON'S MESSAGE SWITCHING SYSTEM

## Text and data go in one

BY GEOFFREY CHARLISH

THE ART of store and forward message switching, which has its roots in the management of telex messages in big companies at a central point, has been moved onwards with the announcement by Scicon of a system that will deal with both text and data (and if desired, voice) and can be customised at any time to meet a user's changing needs—without taking the system off line.

The original idea of message switching was to simplify telex routing in large multi-site and often multinational organisations. At headquarters, incoming telexes would come off receiving telex machines in the form of punched paper tape, which was torn off and fed to



Penny Jackson heads up the message switching division of Europe's largest computing services group, Scicon. She is responsible for bringing the company's new Text and Data Exchange

"Most systems currently in use are based on old technology and are too inflexible to meet the growing need for fast, efficient transfer of information"

other manual machines that would distribute the message to addresses within the organisation.

In the mid-60s systems began to appear from ITT, CASE and others in which these messages were redirected electronically under computer programs that would store the incoming texts and send them forward at chosen times and with specific priorities.

Nowadays, there is an increasing need to switch data as well as text and the TD Exchange is designed so that microcomputers, terminals such as word processors, and host computers can be connected to various kinds of communications lines. Physical interworking can be provided between local, leased, packet switched and public switched telephone lines. Protocol conversions in terms of speed, code and format are carried out automatically.

The TD Exchange is also able to connect together several independent user networks—one of Scicon's first customers, Radio Suisse, a professional communications service com-

pany in Switzerland, will be using a TD Exchange to provide private networks to customers in that country. Called Datacube 3, it is particularly suited to international companies requiring data links with other networks world wide.

Datacube 3, which uses three DEC POP 11/44, with three 11/70 machines for backup, will be able to support 500 lines, 70 separate customer networks and 100,000 messages a day.

A system has also been sold to Caterpillar Overseas S.A. in Switzerland in which four different makes of computer mainframe system and low speed multi-drop circuits to four countries are managed by the TD Exchange, as well as connections to the world telex network.

There are two other, unnamed customers bringing Scicon's sales so far to £50m. Next year, it expects to sell one system a month at prices up to about £200,000 each.

The exchange's virtual transparency to the user is achieved largely by clever software. The system can accept messages character by character, asyn-

chronously from low or medium speed lines, or in blocks of characters in synchronous mode for medium or high speed lines.

Whatever its form, each message is translated into a common internal code, stored on disc and queued for analysis, at the end of which the system will have extracted all the necessary housekeeping data such as channel identification, priority level, and the destination address codes.

Without operator intervention the messages will then be automatically routed at appropriate times according to their priority as soon as appropriate lines are free.

Penny Jackson, who manages Scicon's message switching division, thinks the new system will be particularly attractive to multinationals updating their communications.

She claims that "most systems currently in use are based on old technology and are too inflexible and limited in performance to meet the large organisation's growing need for fast, efficient transfer of information between offices, sites and countries." More on 01-580 5599.

## Computers

## BBC micro add-on

LOGICA, the UK purveyors of Xenix, the Unix-based microcomputer operating system, has signed a contract with Acorn Computers for implementation of the system on the forthcoming 32 bit "add-on" processor for the BBC micro.

Based on the National Semiconductor 32 bit 16032 chip, the new processor is due to appear from Acorn in the Spring of next year. The deployment of Xenix will open up wide prospects for multi-user applications of the expanded machine and for more extensive use of the networking facilities already offered by Acorn's Econet local area network.

According to Hector Hart, commercial manager of Logica's software products group, the Acorn add-on is the first 32 bit processor—and probably the most powerful micro—to which Xenix has been applied. He adds "it will almost certainly establish Xenix as the standard operating system for low cost microcomputers."

There are now 200,000 BBC micros installed and Acorn sees a huge market for the additional processors running Logica's Xenix in London on 01-637 5171.

## Materials

## Elastic facade

OF INTEREST to both commercial and private property owners with buildings suffering from cracked rendering is an elastic facade renovation system made by BASF and introduced into the UK by subsidiary Glasurit Beck of Hordsham, Sussex.

It is claimed that the system, which entails the sequential application of several products, overcomes the age-old problem of cracks in buildings that re-open with seasonal temperature variations or additional settlement for example, and so cannot be permanently repaired with conventional products.

Developed in Germany, Herbolac has been proved there over 20 years says the company; buildings treated have shown no signs of further cracking. More from Glasurit Beck on 0403 790332.

## Security

## Tagging humans

EUREKA, PART of security tag pioneers Senefco, has launched an electronic dog tag for humans which emits a unique code which can be used to control access to sensitive areas.

A plastic tag about the size of a 50p piece carried around by staff can emit this code, which is then picked up and verified by a microelectronic-controlled sensor. It can be used to program access to only certain staff, to zone buildings and to record attendance times.

There is less risk of sabotage or misuse of the automatic system because people do not have to do anything except carry the tag, Eureka claims.

No more hunting for cards, remembering passwords or "performing various rituals to make the doors open and close," said Eureka's managing director Mr Malcolm Barker.

The plastic tags are powered by seven to 10-year batteries, and can emit the unique electronic identity up to a distance of three metres, sufficient to implant receptors in walls or ceilings. More from Eureka on Windsor 07535.

## Software

## Brown's box

GEOFF BROWN of Brown's Operating Systems has added extra software to his ubiquitous "Brown's Box" cluster controller which makes it possible for a wide range of microcomputers and terminals to behave as if they were IBM 3270s, the most popular IBM terminal family.

Using the enhanced Box, a customer can perform local processing or talk to an IBM mainframe without changing the mainframe software.

## BUSINESSES FOR SALE

## PRIME SOUTH COAST LOCATION

## 600 UNIT HOLIDAY CARAVAN/CHALET PARK

Extensive Modern Club, Bars, Shops and Amenities  
Substantial and Rising Profits Record

Full details from Joint Agents

Floury Manico, 57 Tufton Street, London SW1 3QR

Telephone: 01 222 5786

William  
HILLARY  
& Company

CHARTERED SURVEYORS  
LEISURE PROPERTY SPECIALISTS  
91 Crane Street Salisbury SP1 1PU  
Tel: 0722-27101

## BARCHARDS (HULL) LTD

## European Beech Importers

Well established business with turnover approx £1.5m operating from freehold wharf with large undercover storage area, timber drying kilns, dockside cranes etc in Hull, North Humberside.

The business and assets are for sale as a going concern.

Enquiries to The Joint Receiver and Manager  
P.R. Copp F.C.A. (ref 13PRC/APS) on  
01-486 5858 or in writing.

SW  
Stoy Hayward & Partners  
44 Baker Street, London W1M 1DH.

## The Premier Drum Company

Unique opportunity to acquire the business of Premier Drum. Sole U.K. producer of drums and percussion instruments. Turnover approximately £4M per annum of which 40% for export. Operates from modern freehold premises at South Wigston, Leicester, near to motorway system. The business employs some 230 persons many of whom are long serving skilled employees.

Skilled, middle-management team available.

Cork Gully

Interested parties to contact:  
R. A. Soane,  
43 Temple Row,  
Birmingham, B2 5JT.  
Tel: 021-236 9966

## Outstanding Opportunity

Public Company wishes to dispose of related companies in the North-West involved in electrical, mechanical and flooring contracting. Turnover in excess of £2.5 million with net assets of approximately £300,000. A generous discount on net assets would be negotiated to achieve an element of management equity participation in the sale.

Please write to Chairman, Box G 9217, Financial Times, 10 Cannon Street, London EC4P 4BY, or telephone (01) 278 7474.

## GAYBRIDGE ENGINEERING CO. LTD.

Specialises in precision and production engineering within the aerospace, defence and machine tool industry.

Any interested parties wishing to acquire the goodwill and assets of the company contact The Joint Receivers Maurice Withall and Nick Lytle, Fairfax House, Fulwood Place, London WC1V 6DW. Telephone: 01-405 8422. Telex: 287984.

Thornton Baker

## Humberts Landplan

## Surrey

Haslemere 1 mile, Guildford & Petersfield 15 miles, London 45 miles.  
A productive Trout Fishery with a new house, put and take system, processing and packaging plant and farm shop all in excellent setting.

The House: 2 reception rooms, 5 bedrooms, 3 bathrooms, central heating, Garaging, Outbuildings. Mature garden overlooking lakes. Planning consent for staff flat.  
The Fishery: 5 spring fed lakes. Processing and packaging plant with 5 tonnes per week capacity. Car park. Sales kiosk. Farm shop.  
Woodlands and paddocks extending to about 40 acres. For sale Freehold as a going concern. Stock at valuation.  
Details: Humberts Landplan (Land use and Leisure Industry Consultants), 6 Lincoln's Inn Fields, London WC2A 3DS. Tel: 01-362 2121/0998 (01/28513/CHD)

## FOR SALE

## SPAIN

English Builder offers completed villas for sale plus land for further development  
Valle del Sol  
(close Marbella)  
Details on request:  
051-647 7750

Due to unforeseen circumstances an opportunity is available for PRINCIPALS OF SUBSTANCE AND REPUTE to acquire a well established U.K. TRANSPORT COMPANY. Active in warehousing, parcels and general haulage, operating from 2 strategic depots. Sustained growth and profitability. Current V/O £250K. Profits in excess of £100K p.a. Good management and scope for considerable improvement with present facilities. £250K required for assets, goodwill and share. Early decision desired. Confidential enquiries to: Box G5007, Financial Times, 10 Cannon Street, EC4P 4BY

## AN ENGINEERING COMPANY

SITUATED IN SOUTHERN ENGLAND ON A FOUR ACRE NON-INDUSTRIAL SITE  
is seeking offers as a whole, or alternatively the directors would remain in an advisory capacity for an agreed period. At present the company has a long running order book, together with excellent growth prospects. In addition to own machine tool manufacture the company is in the field of test rigs on hydraulic and electronic principles. The latter are own design and are manufactured under MoD 95-21 Approval. Does has its own NATO Reference number.  
The £4,000 in its factory and offices are on a long lease basis, but have received a substantial offer for the surrender.  
Principals interested in purchasing valuable "know-how" and equity should apply to Box G5005, Financial Times, 10 Cannon Street, London EC4P 4BY

7 acre site  
with planning consent for 15 HOLIDAY CHALETs AND 30 TOURING CARAVANS/CAMPING  
Superb location on River Wharfe about 14 miles east of Ilkley and 2 miles south of the Yorkshire Dales National Park.  
FREEHOLD FOR SALE  
EDDONS  
Argus Chambers, Broadway, Bradford BD1 1TH (0274 734701)  
FOR SALE—Security constructed Marina with 1,500 sq. ft. mooring, house and boat facilities. Northampton. Full details: Kivory Commercial (0254) 213434.

## NORTH GLOUCESTERSHIRE Electro-Mechanical Manufacturing Company FOR SALE

Directors seek early retirement. Turnover £500,000 p.a. Good gross margin, 9,000 sq ft freehold factory.  
Contact: John White on 0484 299227 between 2 and 5 pm

## £500,000 PHOTOGRAPHIC BUSINESS FOR SALE

Long Lease  
2 large shops, colour laboratories fully automated, studio complex, in Central West End. 25 years trading. Only selling due to owner's illness.  
Write Box G5004, Financial Times, 10 Cannon Street, EC4P 4BY

## FOR SALE

Well established Bristol based Typsetting and Studio Company with turnover in excess of £200,000, showing good and rising return on assets. The company uses the latest technology and has an impressive client portfolio. Invitations are invited from principals for part or whole of the concern.  
Apply in first instance to: ROGER OATEN & PARTNERS, 4 Priory Road, Clifton, Bristol BS8 1TZ

## FOR SALE

Well established Institute for sale in Central London with excellent reputation and prospects for expansion. This sale is due to retirement of the Director through illness.  
Asking price: £250,000  
For further details please contact: Box G5180, Financial Times, 10 Cannon Street, EC4P 4BY

## NURSING EMPLOYMENT AGENCY

GOODWILL, F & F FOR SALE as going concern £200,000 - £300,000  
Principals write to: Box G5224, Financial Times, 10 Cannon Street, EC4P 4BY

## RETAIL TRAVEL AGENCY GROUP

A rare opportunity to acquire a profitable group of Retail Agencies. All located in prime trading sites. The group comprises of 4 offices, 3 located in South Hertfordshire and one in North London. The group have the benefit of ABTA and IATA licences with a combined s/o approaching £4 million. Consideration would be given to disposing of North London office separately. Offers invited in excess of £390,000.  
Apply Box G5210, Financial Times, 10 Cannon Street, London EC4P 4BY

## EMPLOYMENT AGENCY

Branch of an established specialised employment agency for sale  
For further details please write to: Box No. EA/390, Streets Advertising, Hutton House, 181-185 Fleet Street, London, EC4

## FOR SALE

Genset Exporting Company  
Long established, honest manufacturer with high proportion of export sales. £1.5m turnover, net assets of £250,000 with net assets of £1.5m. While the current recession has affected profitability, the business has a good record of past profits.  
For further details contact: Box G5273, Financial Times, 10 Cannon Street, London EC4P 4BY

## SPECIALIST NEWSPAPER FOR SALE

Please write to Box G5216, Financial Times, 10 Cannon Street, London EC4P 4BY for full details

## Italian Winery

WITH OWN VINEYARDS  
Producing top quality Spumante Classico Metodo Champenoise  
FOR SALE  
Write Box G5218, Financial Times, 10 Cannon Street, EC4P 4BY



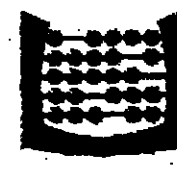
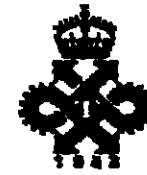
This Prospectus contains particulars given in compliance with the Regulations of the Council of the Stock Exchange for the purpose of providing information with regard to Logica plc. The Company has taken all reasonable steps to ensure that the facts stated herein are true and accurate at all material times and that the information is correct. The Prospectus is not to be construed as a contract. The Company does not accept any liability for the accuracy or completeness of the information contained herein. The Prospectus is not to be used for any purpose other than that for which it is issued. The Prospectus is not to be used for any purpose other than that for which it is issued. The Prospectus is not to be used for any purpose other than that for which it is issued.

The application for the Ordinary Shares now offered for sale will open at 12.00pm on Thursday, 27th October, 1983 and may be closed at any time thereafter. The procedure for application and an Application Form are set out at the end of this Prospectus.

# Logica

## Logica plc Offer for Sale by Tender by Close Brothers Limited

of 10,400,000 Ordinary Shares of 10p each at a minimum tender price of 140p per share, the price tendered being payable in full on application.



### Directors and Advisers

#### Directors

Philip Arthur Booley Hughes, CBE, MA (Cantab.) (Chairman)  
Leonard Arthur Taylor, MA (Oxon.), MSc (Managing Director)  
Patrick Joseph Coen, BSc, PhD, DIC  
Peter Crookes Harbridge, MA (Oxon.)  
David William Mann, MA (Cantab.) (Deputy Managing Director)  
David Mark Kenyon Matthews, BSc  
Gordon Naisby Olson, BSc  
Neil John Prebble  
Colin Gilbert Rowland, MA (Oxon.), D Phil  
Robert George Varley, FCA (Financial Director)  
all of 64 Newman Street, London W1A 4SE.

Professor Dr. Carl Johan Friedrich Böttcher,  
(Non-executive Director)  
Nieuwe Schoolstraat 2a, 2614 HX The Hague, Netherlands.

#### Secretary and Registered Office

Robert George Varley, FCA  
64 Newman Street, London W1A 4SE.

#### Issuing House

Close Brothers Limited, 38 Great St. Helen's, London EC3A 6AP.

#### Stockbrokers

Hoare Covett Limited, Heron House, 319/325 High Holborn,  
London WC1V 7PB and 27 Throgmorton Street, London EC2N 2AN.

#### Auditors and Joint Reporting Accountants

Robson Rhodes, Chartered Accountants, 186 City Road,  
London EC1V 2NU.

#### Joint Reporting Accountants

Price Waterhouse, Chartered Accountants, Southwark Towers,  
32 London Bridge Street, London SE1 9SY.

#### Solicitors to the Company

Clifford Turner, Blackfriars House, 19 New Bridge Street,  
London EC4V 6BT.

#### Solicitors to the Offer for Sale

Freshfields, Grindall House, 25 Newgate Street, London EC1A 7LH.

#### Principal Bankers

National Westminster Bank PLC, 21 Lombard Street,  
London EC3P 3AR.  
Barclays Bank PLC, 15 Great Portland Street, London W1A 4TR.  
Algemene Bank Nederland NV, Blaak 29/34,  
3000 DG Rotterdam, Netherlands.

#### Receiving Bankers

National Westminster Bank PLC, New Issues Department, PO Box 79,  
2 Princes Street, London EC2P 2BD.

#### Registrars and Transfer Office

Close Registrars Limited, Arthur House, 803 High Road, Leyton,  
London E10 7AA.

### Key Information

The information below should be read in conjunction with the full text of this Prospectus from which it is derived.

#### Business

Logica is a leading European independent computer software, consultancy and products company, with an international capability and reputation.

Logica was established in 1969, has grown in turnover and staff every year, and currently has some 1,600 employees.

Logica's activities comprise:

- ☐ Consultancy and Project Management
- ☐ Custom-built Systems: Software and Hardware
- ☐ Software Products
- ☐ Office Automation

Logica's clients are mainly large companies or government departments and are broadly spread over many market sectors.

Logica has operating subsidiaries in seven countries and has undertaken projects in over 40 countries.

Trading Record	Years ended 30th June	1973	1980	1981	1982	1983
Turnover (£'000)		12,914	17,905	25,853	33,168	42,185
Profit before taxation (£'000)		1,091	498	2,068	2,159	3,346
Number of staff (at year end)		728	894	1,031	1,160	1,475

#### Offer for Sale Statistics

Minimum tender price	140p
Number of Ordinary Shares of 10p each in issue after the Offer for Sale	35,000,000
Market capitalisation	£49.0 million
Adjusted earnings per Ordinary Share for the year ended 30th June, 1983:	
(a) after actual tax charge	23p
(b) after notional 52% tax charge	5.9p
Price earnings multiple (based on adjusted earnings):	
(a) after actual tax charge	19.1
(b) after notional 52% tax charge	26.6
Gross dividend yield	
(based on indicated net dividend of 1.0p per Ordinary Share for the year ending 30th June, 1984)	1.02%
Net tangible assets as at 30th June, 1983 per Ordinary Share (together with net proceeds of £3.15 million)	42.9p
Percentage of enlarged issued share capital being marketed:	
by the Company	12.1%
by existing shareholders	17.6%
† Calculated in accordance with Note (viii) in Section 2 of the Accountants' Report set out in Appendix 1.	29.7%

### Shareholders

Shareholders immediately after the Offer for Sale are set out below:

	Percent of issued share capital
Directors, Staff and Associates:	36.4
Existing Institutions:	31.9
Aurways Pension Scheme	
CTN Industrial Investments Limited (on behalf of the NCB Pension Funds)	
Groupo Drouot	
F & C Management Limited	
Provincial Insurance PLC	
Safeguard Industrial Investments PLC	
Skandia Insurance Company Limited	
Schering-Well Pensionfunds	
The Scottish Investment Trust PLC	
Public:	32.7
	100.0

The table above includes any application for shares by staff that application or Director's shareholdings are shown in the table above and are not included in the table above.

#### Share Capital

Authorised	Issued
£3,750,000	£3,500,000
	in Ordinary Shares of 10p each

#### Principal Definition

In this Prospectus "Logica" shall mean Logica plc and its subsidiaries, or previous ultimate holding companies and their subsidiaries, or where the context requires, Logica plc or any of its appropriate subsidiaries.

#### Indebtedness

At the close of business on 30th September, 1983 the Company and its subsidiaries had outstanding bank overdrafts of £4,630,700 (of which £125,708 was secured), lessing commitments of £282,633, have purchase commitments of £287,000 and guarantees of £558,117. Save as aforesaid and apart from intra-group liabilities, at the close of business on 30th September, 1983 neither the Company nor any of its subsidiaries had any loan capital (including term loans) outstanding, or created but unissued, or any outstanding mortgages, charges, or other borrowings or indebtedness in the nature of borrowings, including bank overdrafts and liabilities under acceptances (other than normal trade bills) or acceptance credits, hire-purchase commitments or guarantees or (except for contingent liabilities arising in the ordinary course of business) other material contingent liabilities. At the close of business on 30th September, 1983 the Company and its subsidiaries had aggregate cash balances of £542,715. For the purposes hereof amounts in foreign currencies have been translated into sterling at the relevant rates of exchange on 30th September, 1983.

### History

Logica was founded in 1969 by a group of five people, including Philip Hughes, Len Taylor and Patrick Coen. Philip Hughes and Len Taylor, who were the initial executive directors, had already held senior management positions in the industry and had previously worked together for eight years.

From the beginning Logica set out to establish high technical standards and to achieve a prominent position in its markets of high technology consultancy and services. The success of this policy was reflected in Logica's ability to attract expert staff and to secure important contracts against larger and more established competitors.

The growth and diversification of Logica have been rapid and sustained. Both turnover and staff numbers have grown every year since its foundation. By the year ended 30th June, 1983 it had achieved a turnover of £42 million. It currently has some 1,600 employees in seven countries.

Logica's growth has been primarily from internal development which has been fuelled by a record of profitability and a policy of retaining profits. However, as a complement to this, Logica has also made a number of acquisitions, notably the operations of T. C. Hudson Associates Limited (1972), Freyberg Systems Associates, Incorporated (1981) and Planning Research Corporation (Australia) Pty. Limited (1983).

Logica has emphasised overseas expansion and is one of the leading exporters of computer consultancy and software services from the UK. However it has increasingly serviced its international business through operating subsidiaries in different countries of the world, namely the Netherlands (established in 1970), Australia (1976), Sweden (1977), the US (1979), Belgium (1980) and West Germany (1983).

Logica obtained its original finance from Planning Research Corporation ("PRC"), a listed US professional services company. After an initial period Logica's staff held a voting majority of the shares while PRC's shareholding entitled it to a majority of the profits and assets.

Early in 1979 PRC sold its shareholding in Logica and the National Enterprise Board ("NEB") became a shareholder providing both equity and loan finance. In December 1979, institutional shareholders also subscribed for additional equity. In 1982 the NEB realised its investment in Logica and, as part of the resulting reorganisation, further institutional investors were introduced. At that time £1.5 million was raised to expand working capital.

In 1979 Logica decided to establish a division, which had been working on word-processing systems, as a separate operating company called Logica VTS Limited ("VTS"). The NEB provided separate funding for this. A subsidiary of the NEB, Nease Office Systems Limited ("Nease"), entered into supply and marketing arrangements with VTS which were later terminated in 1982. At that time, International Computers PLC ("ICL") agreed an agreement with VTS involving volume orders for word-processors and a research and development contract.

Logica's record of technological achievement has been recognised recently by the following awards—November 1982—the British Computer Society's annual award for Technological Achievement for its work on continuous speech recognition.

February 1983—a citation by Computing newspaper as "the UK company which in the opinion of Computerworld panel of experts made the greatest contribution to Information Technology during the decade 1973-1983".

April 1983—the Queen's Award for Technology to VTS for its word-processor.

Logica has become the largest independent UK software company, measured by turnover or number of staff.

### Description of Activities

Logica's activities can be divided into four broad categories, which contributed to turnover for the three years ended 30th June, 1983 approximately as follows:

	1981	1982	1983
Consultancy and Project Management	23	27	19
Custom-built Systems: Software and Hardware	47	55	48
Software Products	4	5	10
Office Automation	23	14	23
	100	100	100

Office automation contributed approximately 37 per cent. of Logica's profit before taxation in 1983 (1982—19 per cent.; 1981—17 per cent.). In its other activities Logica analyses its profit by its professional operating units, which encompass more than one of the categories set out above. Each of Logica's major activities reinforces the others. Consultancy can often lead to contracts for the provision of custom-built software and hardware. Client projects can lead to the development of new services and products. Product design and manufacture provide first-hand experience which strengthens Logica's consulting capability.

#### Consultancy and Project Management

Logica undertakes consultancy assignments in computing, communications, office automation and management sciences for a wide range of clients. Examples include designing and managing the installation of worldwide corporate telecommunications for multi-national companies, defining overall data-processing policies for organisations, specifying detailed requirements in computing and communications and assisting clients to select suppliers, negotiate contracts and install and manage systems. Many of these services projects involve planning models for businesses and government administrations, such as health and social security, to improve investment and operational decisions.

In addition to its work for users, Logica has established a strong position as an adviser to the computing and telecommunications industries on product policy, marketing strategy and detailed market research. Work includes advice to major US and Japanese companies seeking information on the European market, market forecasts for European and Australian telecommunications authorities on data transmission and new communications services and detailed product definition studies for manufacturers in Europe and the US. In addition to specific consultancy projects for individual clients, Logica also undertakes multi-client and industry-wide studies.

#### Custom-built Systems: Software and Hardware

The largest activity of Logica is designing and building complex software. Clients are usually large organisations, themselves sophisticated and expert users of computers. Logica's role is to supply systems that draw upon its special capabilities in real-time control and communications. Logica writes or acquires equipment of most of the world's major suppliers of mainframe, min, and micro computers. Logica often acts as prime contractor for the turnkey supply of computer systems. As Logica has grown so has its capability to compete with the major electronic companies for steadily larger contracts. Such contracts which involve the responsibility for managing the work of sub-contractors are normally based on standard products purchased by Logica from computer manufacturers at a discount under OEM (original equipment manufacturer) agreements.

In addition to using standard hardware, Logica also designs and manufactures its own special purpose hardware. This enables Logica to address the needs of clients both by custom-built software, which takes general purpose computers to solve specific applications, and by custom-built hardware. Logica has consistently maintained this dual capability rather than just being a software house, and the Directors consider that this has been a major factor in its growth, distinguishing it from many competitors.

#### Software Products

Logica designs and sells re-usable elements of software. Such software products, which in some cases include specially configured hardware, fall into two categories—those which Logica calls "systems kernels" that are used as components in the supply of custom-built computer systems and those that are sold by volume as standardised products in their own right. Royalties are payable by Logica on the sale of some of these products.

A systems kernel is used as the basis for constructing a number of computer systems for similar applications. Each project involves some modification and often substantial additions to the systems kernel. However, its existence enables Logica to transfer previously developed expertise to projects around the world and to provide lower cost and more highly tested software to clients. For the banking industry, systems kernels such as FASTRAX and FASTRAN form the basis of funds transfer systems, whilst DIDES provides an integrated display system for foreign exchange dealing rooms. For the television industry Logica supplies CONTEXT, which enables television companies to implement teletext, and FLUID, which provides facilities for the creation and manipulation of pictures stored in electronic form. For the railway industry and airlines MASTER CONTROL forms the basis of control systems for gate and wave storage and distribution. INSIGHT and LOGOS provide facilities for image processing and continuous speech recognition respectively in various applications.

Logica also sells general purpose and standardised software products, primarily RAPPORT and XENIX. RAPPORT is a sophisticated relational database system designed by Logica to run on a wide variety of computers. XENIX, developed in the US, is an enhanced version of UNIX, UNIX is becoming one of the world's de facto standard computer operating systems (XENIX and UNIX are respectively trademarks of Microsoft and Bell Laboratories).

#### Office Automation

As one of the pioneers of software design for word processing, Logica has been involved in office automation since the early 1970s. It developed UNICOM, an advanced multi-user system, for Unisys. Since then Logica has continued to increase its specialisation in word processing software and local area networks. This has led to the establishment of volume manufacturing facilities in Sweden in 1983.

Logica currently designs, manufactures and sells the VTS 2200 range of word-processors, powerful single-user units, developed from the VTS 1000, which was first launched by Logica in 1978. The products have been sold in over 20 countries, through Logica's own sales force and through distributors. Currently account for over 20 per cent. of total annual sales of such machines in the UK. In the last financial year 13 per cent. of Logica's turnover (51 per cent. of its turnover for office automation as a whole) resulted from sales of the VTS 2200 to ICL under a distribution agreement which is described under the heading "Market Share" in the Prospectus.

Logica also manufactures and sells POLYNET, which is a local area network based on the Cambridge Ring technology. Systems are now installed in the UK, the US, Australia, Sweden and Japan. Logica also manufactures and sells the VITESS, a 16 bit personal business computer, based on the VTS 2200 hardware design.

The Directors believe that Logica has one of the leading software development teams in Europe in word processing and local area network technology. Development of the next generation of office automation products is well advanced.







## Appendix 1

## Accountants' Report

The following is a copy of the Report to the Directors of Logica plc and to the Directors of Close Brothers Limited, made by Robert Rhodes, Chartered Accountant, the auditors and joint reporting accountants and firm, Chartered Accountants, in respect of the financial statements of Logica plc and its subsidiaries, for the year ended 30th June 1983.

Price Waterhouse, Robert Rhodes, Chartered Accountants, 180 City Road, London EC1Y 1AN.

The Directors, Logica plc, 20th October, 1983.

We have examined the financial information set out below of Logica plc (the Company) and its subsidiaries (together referred to as the Group) for the five years from 1st July 1978 to 30th June 1983. The auditors of the Group throughout this period have been Robert Rhodes, Chartered Accountants.

During the five year period a number of Group reorganisations have taken place, which have involved the creation of successive new holding companies and changes in shareholders and the nature of the Group.

A further capital reorganisation was undertaken, effective 20th October, 1982, whereby all subsidiary companies of Logica plc have become wholly owned, other than Logica, Inc. in which there remains a 19.9 per cent minority interest. The financial information set out in this report has been prepared on the basis that the Group had been in existence since its present constitution (first including new shares issued in connection with this offer for sale) throughout the five year period. The results for Freyberg Systems Associates, Incorporated and Fidelity Research Corporation (Australia) Pty. Ltd. and have been consolidated from their respective dates of acquisition by the Group. The financial information is based on the audited financial statements of Logica plc and its subsidiaries after making such adjustments as we consider appropriate.

In our opinion the financial information set out under the heading Historical Cost Accounts gives, under the historical cost convention and on the basis of the constitution of the Group as stated above, a true and fair view of the profits and losses and application of funds of the Group for the five years ended 30th June, 1983 and of the state of affairs of the Company and the Group at 30th June, 1983.

In our opinion the financial information set out under the heading Current Cost Accounts has been properly prepared in accordance with the policies and methods described in the notes thereto to give the information required by Statement of Standard Accounting Practice No. 16.

No audited financial statements have been prepared for the Company or the Group for any period subsequent to 30th June, 1983.

## Historical Cost Accounts

1. Accounting policies  
The significant accounting policies adopted in arriving at the financial information in this report are as follows:

(i) Turnover  
Turnover represents amounts invoiced to clients net of amounts billed in advance and excluding VAT.

(ii) Recognition of profits  
(a) Profit on contracts for the supply of professional services at pre-determined rates is taken as and when the work is billed irrespective of the duration of the contract.

(b) Profit is taken on fixed price contracts when the contract is in progress, having regard to the proportion of the cost of the contract which has been completed by the balance sheet date. Provision is made for any foreseeable future losses based on an estimate of the direct costs to be incurred.

(iii) Stock and work in progress  
(a) Physical stock and work in progress is valued at the lower of cost and net realisable value.

(b) The value of work in progress on fixed price contracts is adjusted to take up profit to date or foreseeable losses in accordance with (a) above.

(c) Other work in progress is valued at cost or at estimated net realisable value, whichever is lower. Cost comprises:

Professional work in progress valued at the cost of salaries and associated payroll expenses of employees engaged on assignments and a proportion of attributable overheads.  
Unbilled expenses incurred and equipment purchased for clients in connection with specific contracts.

(iv) Research and development  
Research costs are written off in the year in which they are incurred unless they are to be reimbursed by third parties. Development costs are also written off in the year in which they are incurred unless they are to be reimbursed by third parties or they result in the production of an identifiable asset.

(v) Goodwill  
Goodwill is stated at cost and represents the excess of the cost of acquisition of subsidiaries over related net tangible assets at the dates of acquisition.

(vi) Depreciation  
Depreciation is provided at rates calculated to write down the cost of all tangible fixed assets over their estimated useful lives on a straight-line basis. The annual rates of depreciation used are as follows:

Office equipment — 10 per cent.  
Computer equipment — 20 per cent. for the year ended 30th June, 1983; 33 1/3 per cent. for previous years.  
Motor cars — 25 per cent.  
Plant — 25 per cent.  
Tooling — 50 per cent.  
Leaseholds — equally over life of lease.

(vii) Foreign currency translation  
The results, liabilities and assets of foreign subsidiaries are translated into sterling at the rate of exchange ruling at the relevant balance sheet date. Differences arising on revaluation of the net investment in foreign subsidiaries and related net foreign currency borrowings are dealt with as adjustments to reserves.

All other differences on exchange are taken to the profit and loss account.

(viii) Deferred taxation  
Provision is made for deferred taxation, at the rate of tax ruling at the relevant balance sheet date, to take account of timing differences between the treatment of certain items for accounts purposes and their treatment for tax purposes. The provision is maintained to the extent that timing differences are not expected with reasonable probability to continue into the foreseeable future.

(ix) Finance lease income  
Income from finance leases is taken to profit and loss account based on a constant periodic rate of return on the net cash investment in each lease.

## 2. Consolidated profit and loss accounts

The profit and loss accounts of the Group for each of the five years ended 30th June, 1983 are set out below:

	Years ended 30th June				
	1978	1980	1981	1982	1983
Turnover	£1,914	£1,706	£2,003	£2,000	£2,000
Less: (Decrease) in stocks of finished goods and work in progress	1,145	645	(195)	162	2,238
Revenue	14,059	18,350	25,658	33,330	44,423
Raw materials, consumables and other external charges	4,557	5,592	6,252	8,580	12,212
Staff costs	5,934	8,366	11,219	15,686	19,969
Depreciation and other amounts written off	285	573	730	800	884
Intangible fixed assets	1,972	2,704	5,071	5,848	7,825
Other operating charges	12,748	12,673	23,362	30,823	40,990
Profit on ordinary activities before taxation	1,311	877	2,378	2,407	3,433
Less: Interest payable (net)	220	373	308	248	87
Profit on ordinary activities before taxation	1,091	504	2,070	2,159	3,346
Less: Taxation	(412)	113	(732)	(1,117)	(1,011)
Profit on ordinary activities after taxation	679	617	1,338	1,042	2,335
Minority interest	—	48	—	(58)	(10)
Profit attributable to Ordinary Shareholders	679	669	1,338	984	2,325
Adjusted Earnings per Ordinary Share	2.2p	2.2p	4.3p	3.2p	2.6p
(a) after actual tax charge	—	—	—	—	5.3p
(b) after notional 52 per cent. tax charge	—	—	—	—	—

## Notes

(i) Dividends and retained earnings

In connection with a Group reorganisation effective January 1978 a dividend of £222,283 was paid by Logica Nederland B.V. on 28th December, 1978 to Planning Research Corporation. This dividend was declared out of retained earnings as at 30th June, 1978 and is excluded from the above consolidated profit and loss accounts. With this exception, no dividends have been paid to third parties during the five years ended 30th June, 1983.

Profit attributable to Ordinary Shareholders in the five years ended 30th June, 1983 total £2,325,000. This, together with relevant movements on foreign currency translation amounting to £2,189,000 for the five year period, would give cumulative retained earnings of £4,514,000.

As a result of the various Group reorganisations, £4,685,000 of these retained earnings, and all retained earnings prior to 1st July, 1978, represent 'pre-acquisition' profits in the financial statements of the Group at 30th June, 1983 and have been capitalised by way of share capital issues and related share premiums. Accordingly retained earnings of the Group at 30th June, 1983 amounted to £1,539,000.

There were no other movements on retained earnings during the five year period.

## (ii) Turnover

The Group turnover for each of the five years ended 30th June, 1983 was as follows:

	Years ended 30th June				
	1978	1980	1981	1982	1983
UK	£777	£700	£700	£700	£700
Rest of Europe	7,481	11,652	15,958	15,958	15,958
USA	4,250	4,251	4,254	4,254	4,254
Rest of World	281	452	1,454	4,251	5,187
	12,914	17,055	22,362	31,162	42,185

## (iii) Profit on ordinary activities before taxation

Profit on ordinary activities before taxation, as stated after charge for:

	Years ended 30th June				
	1978	1980	1981	1982	1983
Depreciation	£100	£100	£100	£100	£100
Director's emoluments	54	128	155	217	289
Auditors' remuneration	43	54	75	84	90
Share of profits of subsidiaries	—	24	73	111	126

Depreciation: the effect of the change in the estimated useful life of computer equipment noted in accounting policy (vi) in Section 1 above was to reduce the charge for the year ended 30th June, 1983 by £1,250,000.

## (iv) Interest

	Years ended 30th June				
	1978	1980	1981	1982	1983
Interest payable on:					
Short term loan	17	15	15	13	—
Bank overdraft	113	287	315	251	543
Interest on short term borrowing	103	114	—	—	—
Other	3	22	59	56	—
	233	418	389	360	593

Interest receivable on:

	Years ended 30th June				
	1978	1980	1981	1982	1983
Bank deposits	5	23	81	65	122
Other	11	39	81	112	163
	16	62	162	177	285

Interest payable (net)

	Years ended 30th June				
	1978	1980	1981	1982	1983
	217	356	227	183	308

## (v) Taxation

The charge for taxation on the profit on ordinary activities for each of the five years ended 30th June, 1983 is as follows:

	Years ended 30th June				
	1978	1980	1981	1982	1983
UK corporation tax at 52% on profits for the year	250	10	212	250	461
Overseas taxation	—	—	—	43	13
Foreign tax in respect of overseas subsidiaries	225	(179)	517	256	50
Relief for overseas taxation	—	(6)	(2)	(2)	(5)
Overprovision in subsidiaries in respect of prior years	436	(174)	722	895	1,541
Deferred taxation	(113)	81	3	(13)	(32)
	412	(112)	732	1,117	1,511

## (vi) Extraordinary item

The extraordinary item arising in the year ended 30th June, 1983 related to the sale of distribution rights to a new leading system by Logica VTS Limited. The tax arose on the disposal of the chargeable gain was relieved against tax losses arising in that subsidiary during that year.

## (vii) Earnings per Ordinary Share

Earnings per Ordinary Share are based on the 25,000,000 Ordinary Shares of 1p each in issue immediately prior to the issue of 4,244,837 new Ordinary Shares in connection with the offer for sale, and on the profit on ordinary activities, together with associated interest at 10 per cent. on the net proceeds of the issue of £2,189,000, calculated at the minimum tender price, less minority interest and after:

(a) the actual tax charge on profit on ordinary activities and tax at 52 per cent. on the notional interest.

(b) a notional tax charge of 52 per cent. on profit on ordinary activities and on the notional interest.

## (viii) Adjusted earnings per Ordinary Share

Adjusted earnings per Ordinary Share for the year ended 30th June, 1983 are based on the profit on ordinary activities, together with associated interest at 10 per cent. on the net proceeds of the issue of £2,189,000, calculated at the minimum tender price, less minority interest and after:

(a) the actual tax charge on profit on ordinary activities and tax at 52 per cent. on the notional interest.

(b) a notional tax charge of 52 per cent. on profit on ordinary activities and on the notional interest.

## 3. Consolidated source and application of funds statements

The source and application of funds statements for the Group for each of the five years ended 30th June, 1983 are as follows:

	Years ended 30th June				
	1978	1980	1981	1982	1983
Profit on ordinary activities before taxation	£100	£100	£100	£100	£100
Extraordinary item	1,951	438	2,068	2,159	3,346
	1,051	538	2,168	2,259	3,446

## Adjustments for items not involving the movement of funds

	Years ended 30th June				
	1978	1980	1981	1982	1983
Depreciation	285	573	730	800	884
Deferred development costs	(4)	(25)	(12)	(5)	(12)
Profit on sale of fixed assets	(4)	(25)	(12)	(5)	(12)
Exchange differences on translation of fixed assets and taxation liabilities	—	4	11	22	(25)
Exchange differences on translation of the net investment in foreign subsidiaries	(161)	(6)	(47)	54	73

## Funds generated by operations

	Years ended 30th June				
	1978	1980	1981	1982	1983
Taxation refunded	—	—	393	172	—
Taxation paid	(973)	(173)	(613)	(754)	(625)
Sale of fixed assets	96	107	204	57	120
Purchase of fixed assets	(882)	(1,624)	(1,205)	(1,223)	(2,113)
	23	(589)	1,637	1,132	1,725

## Funds generated by the business

	Years ended 30th June				
	1978	1980	1981	1982	1983
Loans received	—	603	353	—	—
Loans repaid	—	—	(103)	—	(653)
Share issued in part consideration for new subsidiary	—	—	—	240	—
Purchase of new subsidiaries	—	—	—	(384)	(324)
Cash injections/withdrawals associated with Group reorganisations (see below)	444	181	—	(100)	1,510
	444	181	—	(100)	1,510

## (Increase)/Decrease in working capital

	Years ended 30th June				
	1978	1980	1981	1982	1983
Stock and work in progress	(550)	(645)	1	(132)	(2,325)
Debtors	(1,118)	(953)	(1,353)	(1,473)	(4,173)
Creditors	509	1,882	(163)	699	2,451
	(659)	(716)	(1,705)	(905)	(4,047)

## Increase/(Decrease) in net liquid funds

	Years ended 30th June				
	1978	1980	1981	1982	1983
Cash injections/withdrawals associated with Group reorganisations as set out above	444	181	—	(100)	1,510
Cash payments to vendor shareholders	(4,167)	—	—	—	(3,445)
Cash subscribed by incoming shareholders for new shares	2,815	1,877	—	—	4,355
Loans received from National Enterprise Board	1,796	—	—	—	—
Loans repaid to National Enterprise Board	—	(1,696)	—	(100)	—
	444	181	—	(100)	1,510

## 4. Balance sheets

The balance sheets of the Company and of the Group at 30th June, 1983 are as follows:

	Years ended 30th June				
	1978	1980	1981	1982	1983
Fixed assets	£100	£100	£100	£100	£100
Intangible fixed assets	60	—	—	—	3,448
Tangible assets	40	—	—	—	4,232
Investments in subsidiaries at cost	—	—	8,394	—	—
	—	—	8,394	—	7,538

## Current assets

	Years ended 30th June				
	1978	1980	1981	1982	1983
Stock and work in progress	(550)	(645)	1	(132)	(2,325)
Debtors	(1,118)	(953)	(1,353)	(1,473)	(4,173)
Creditors	509	1,882	(163)	699	2,451
	(659)	(716)	(1,705)	(905)	(4,047)

## Current liabilities

	Years ended 30th June				
	1978	1980	1981	1982	1983
Bank loans and overdrafts	(1)	—	2,833	—	—
Creditors	—	2	7,786	—	—
Taxation and other state creditors	—	—	—	2,274	—
	—	2	10,619	2,274	—

## Net current assets

	Years ended 30th June				
	1978	1980	1981	1982	1983
	—	—	6,694	1,369	3,491

## Total assets less current liabilities












## BIDS AND DEALS

## Abdullah brothers on Hawkins board

MR RASCHID ABDULLAH and his brother Osman have joined the board of Hawkins and Tipson, a leading Sussex rope-maker, as chairman and director respectively.

This follows the successful takeover of Hawkins by Evered, Midlands-based group specialising in non-ferrous strip for the electronics and communications industries, which was taken over by the Abdullah brothers in April 1981.

Mr Alan Barrett, who was chairman of Hawkins before the £3.5m takeover, has resigned along with fellow director Mr E. Dean.

The Abdullah brothers, raised in the Midlands, have built up Evered as the core of a diversified industrial holding company. Their offer for Hawkins became unconditional a week ago when they declared ownership of 51.2 per cent of the company's shares.

## Sanderson Vere

Sanderson Vere Crane has arranged with County Bank equity linked loan facilities of £1m over a five-year period to finance further expansion of the company's television commercials. Turnover has grown from £130,000 in 1978 to £1.7m this year.

Clients include leading advertising agencies, all commercial television stations, as well as film production companies and other diverse bodies such as the British Film Institute and the Football Association.

The money will help SVC to update existing facilities as well as build two new edit suites at Wardour Street offices.

## Argyll Foods

Under the terms of the merger of Argyll Foods and Amalgamated Distilled Products, holders of 1,487,161 warrants to subscribe for ordinary shares of Argyll have elected to receive ordinary shares of Argyll Group in exchange for their Argyll Foods warrants, on the basis of one Argyll Group ordinary share for every three Argyll Foods warrants.

The remaining holders of Argyll Foods warrants, other than Argyll Group, will receive one warrant to subscribe for Argyll Group ordinary shares for each Argyll Foods warrant. As a consequence, after implementation of the merger, there will be 7,102,026 warrants to subscribe for ordinary shares of 25p of Argyll Group in issue. It is anticipated that the merger will be implemented on November 11 and that dealings in the ordinary shares and warrants of Argyll Group will commence three days later.

## Juliana's buys Raffles nightclub for £290,000

BY DAVID DODWELL

Juliana's Holdings, the group which owns 120 discotheques and nightclubs worldwide, has acquired the exclusive London nightclub Raffles for £290,000.

Mr Oliver Vaughan, Juliana's chairman, said yesterday that Raffles would be the disco group's "flagship" nightclub. Almost all of the group's discotheques are based in hotels, and this will be its first independently-run nightclub.

He said that Raffles would continue to use its own name because it is so well-known—but would not rule out the possibility of establishing a new London club in due course which would carry the name Juliana's.

Raffles is currently owned by a consortium headed by a Mr Massey. The consortium will receive £230,000 for the freehold of the site, with a further £50,000 for memberships and goodwill, and £10,000 for fixtures and fittings.

After closure for renovation, it will reopen before Christmas in the style of an English country drawing room/cum library. Juliana's expects to spend £70,000 on renovation.

Current membership of the club is understood to be about 1,200. This may be expanded to 2,500 in due course, though the club itself will have a capacity of no more than 100 people.

After reopening the nightclub, which is set in London's fashionable Kings Road, will no longer serve drinks. Instead, it will specialise in traditional English breakfasts which will not normally be served until after midnight.

Explaining the reason for buying the club, Mr Vaughan said that members of Juliana's nightclubs worldwide had constantly asked where Juliana's was in London. In future, these members will get automatic membership of Raffles and perhaps use this as an opportunity to savour pre-dawn kidneys, kippers, scrambled eggs or other traditional English breakfast delicacies.

## Williams in talks with Garford

Williams Holdings, the Monmouth-based die-caster, founder engineer and EMV shares is holding merger talks with Garford-Lilly Industries, the engineering, plastics and wood-working group.

Directors of Garford-Lilly, along with the Gould family, which owns a large stake in the company, said yesterday that subject to the satisfactory resolution of talks, they intended to accept the offer to be made from Williams.

Williams, which has been making losses since 1980, emerged late last year as the bidder for the loss-making

Derby-based Ley's Foundries and Engineering Group.

Williams revealed in August that all operations with the exception of Ley's were trading at their highest levels for three years and predicted a return to profits during the second half of its trading year. First-half losses to June 30 1983 amounted to £283,000—up from £198,000 a year earlier—on a turnover up from £1.55m to £1.64m.

Garford-Lilly earned a pre-tax profit in the year to March 31 this year of £300,000 on a turnover of £6.25m. The Gould family, together with other directors of the company, are understood to

control more than 50 per cent of the company's shares.

Neither company would expand yesterday of the announcement made to the Stock Exchange, except to say that if talks proceeded smoothly, a deal could be completed by late October. The net asset value of Garford, according to figures in the most recent report and accounts, amounts to £1.9p a share—or £27.7m.

On the stock market, Garford's shares leapt 16p to end the day at 54p. At this level, its market valuation is more than £3.5m. Williams' shares remained unchanged at 105p.

## Crosby House

Crosby House Group has received acceptances in respect of 1,236,122 ordinary shares (including those which are to be issued upon conversion of the convertible unsecured loan stock) in Rightwise. This represents 43.4 per cent of the ordinary shares to be in issue following conversion of the loan stock.

Prior to the announcement of the offer, the Crosby House Group owned 1,154,719 ordinary and £50,000 nominal of convertible unsecured loan stock of Rightwise.

Crosby House has not acquired and has not, except pursuant to the offer, agreed to acquire, any such securities since that date.

Following conversion of the Rightwise loan stock it will own or will have agreed to acquire 2,415,967 ordinary (84.3 per cent) of the ordinary shares then in issue.

The offer is now unconditional as to acceptances and will remain open for acceptance until further notice. The loan stock alternative made available under

the terms of the offer will close at 3 pm on November 4 1983.

## Albert Fisher Group

Shareholders in Albert Fisher Group have approved the acquisition of F. J. Need (Crewe) together with related share planning arrangements, at an extraordinary meeting.

Accordingly, completion of the acquisition has taken place. The 1,340,642 ordinary shares issued with the acquisition have been admitted to the Stock Exchange official list.

The directors' holdings of Albert Fisher ordinary shares are now as follows: Mr A. B. B. 1,875,888 shares, Mr P. C. Colling 70,758 shares, Mr D. G. Pearce 310,464 shares, and Mr G. A. Whitaker 20,118 shares.

## Pritchard Security

Pritchard Security Services, of Redhill, has acquired Zeus Security, of central London, which has an annual turnover of £800,000.

Zeus is a specialist in the provision of security guards and patrols and will continue to

trade under its old name, and existing operations management will remain in office.

PSS is a member of the International Pritchard Services Group and is one of the fastest-growing security concerns in Britain. The company operates from 23 branches and provides a range of security services, from uniformed guards and night patrols to cash-in-transit and waste packing. The move will strengthen PSS's coverage in the London area which until now has been handled from its Wandsworth branch.

## Martin-Black

Martin-Black has exchanged contracts for the purchase of Ryelide Construction Company for £240,000.

Ryelide is engaged in constructional engineering, in particular the supply of structural steel work for utility buildings and operates from Dalry, Ayrshire.

For the year to April 30, 1983 Ryelide made net profits before tax of £26,000. Net tangible assets at that date stood at £256,000.

## SHARE STAKES

British Dredging—RMC Group has purchased a further 25,000 ordinary shares, bringing its total holding to 4,211,800 (24.42 per cent).

Rock—Mr Michael Hartland and companies in which he holds a controlling interest, have acquired a further 50,000 ordinary shares. The aggregate holding is now 885,000 ordinary shares (5.596 per cent).

Stenhouse Holdings—Two directors, Wm Wilson and J. B. Devine, have notified that Reed Stenhouse Voluntary Equity Scheme, in which they are trustees, purchased 30,000 shares at 80p per share. This increases the Scheme's interest (and Messrs Wilson and Devine's interests as trustees) to 1,977,504 (5.2 per cent).

Noble and Lund—Selective Investments has acquired a further 50,000 shares bringing holding to 370,000 ordinary stock units (6.45 per cent).

Myson—London Trust on September 16 1983, sold 2m ordinary shares, thereby reducing its holding to 4,293,014 (5.4 per cent).

Kode Intl—Provident Mutual Life Assurance Association has an interest in 226,000 ordinary shares (2.26 per cent).

Feeder Agricultural Industries—Usborne and Son (London)

has acquired a further 200,000 ordinary shares bringing total holding to 1,888,000 shares (10 per cent).

Whitman Reeve Angel—Miss R. Martin-Jones and Mr D. P. Nicholas, following the appointment of certain settled funds to beneficiaries, no longer have a notifiable interest.

Energy Services and Electronics—E. G. Rollason, director, has bought 50,000 shares.

Widney—P. B. Cheston, director, has sold 40,000 ordinary shares.

Associated Paper Industries—Prudential Corp. has become interested in 895,979 ordinary shares (4.9 per cent).

Glen Abbey—John J. Teeling has acquired 175,000 ordinary shares, making his total holding 715,820.

Fleming Enterprise Inv.—Sun Life Assurance has a total holding of 590,000 shares (5.9 per cent).

J. Worthington (Holdings)—Michael Hartland and Financial Service Companies in which he holds controlling interests, have increased by 104,000 shares their holding to a total of 277,000 shares (1.3 per cent). Mr Hartland has been invited to join the board.

This advertisement is issued in compliance with the requirements of the Council of The Stock Exchange. It does not constitute an invitation to subscribe for or purchase any securities.

## Crosby House Group plc

(Registered in England—No. 671099)

Issue of up to £1,565,050 nominal of 13p per cent. Unsecured Loan Stock 1987/90

This advertisement appears in connection with the issue of up to £1,565,050 nominal of 13p per cent. Unsecured Loan Stock 1987/90 ("New Loan Stock") pursuant to offers and a proposal by Crosby House Group plc in respect of all shares and convertible unsecured loan stock of Rightwise plc owned by Crosby House Group plc and its subsidiaries. The New Loan Stock has been admitted to the Official List by the Council of The Stock Exchange.

Particulars relating to the New Loan Stock are available in the Extra Statistical Services and may be obtained during normal business hours on any weekday (excluding Saturdays and public holidays) up to and including 18th November, 1983 from:

N. M. Rothschild & Sons Limited,  
New Court,  
St. Swithin's Lane,  
London EC4P 4DU

Lawrence, Frost & Co.,  
Basildon House,  
7-11 Moorgate,  
London EC2R 6AH

## NOTICE OF REDEMPTION

To the Holders of

## HILL SAMUEL GROUP PLC

(formerly Hill Samuel Group Limited)

8½% Bonds due 1986, Due November 15, 1986

NOTICE IS HEREBY GIVEN that, pursuant to the provisions of the Indenture dated as of November 15, 1971 providing for the above Bonds, the principal amount of said Bonds have been selected for redemption on November 15, 1983, through operation of the mandatory Sinking Fund at the redemption price of 100% of the principal amount thereof, together with accrued interest thereon to said date, as follows:

OUTSTANDING BONDS OF \$1,000 EACH BEARING THE DISTINCTIVE NUMBERS ENDING IN ANY OF THE FOLLOWING TWO DIGITS:

10 14 25 43 61 86 72 75 81 83 91 96

ALSO OUTSTANDING BONDS BEARING THE FOLLOWING NUMBERS:

52 53 1203 1703 2203 2703 3203 4003 5003 12003 13003 14003 15003 16003 17003 18003 19003 20003 21003 22003 23003 24003 25003 26003 27003 28003 29003 30003 31003 32003 33003 34003 35003 36003 37003 38003 39003 40003 41003 42003 43003 44003 45003 46003 47003 48003 49003 50003 51003 52003 53003 54003 55003 56003 57003 58003 59003 60003 61003 62003 63003 64003 65003 66003 67003 68003 69003 70003 71003 72003 73003 74003 75003 76003 77003 78003 79003 80003 81003 82003 83003 84003 85003 86003 87003 88003 89003 90003 91003 92003 93003 94003 95003 96003 97003 98003 99003

On November 15, 1983, the Bonds designated above will become due and payable in each coin or currency of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts. Said Bonds will be paid, upon presentation and surrender thereof with all coupons pertaining thereto maturing after the redemption date, at the option of the holder either (a) at the corporate trust office of Morgan Guaranty Trust Company of New York, 13th Floor, 30 West Broadway, New York, N.Y. 10015, or (b) at the main offices of any of the following: Morgan Guaranty Trust Company of New York in Brussels, Frankfurt am Main, Paris and Zurich; Hill Samuel & Co. Limited in London; Credit Suisse S.A. in Milan and Rome; Allgemeine Bank Norddeutsche N.V. in Amsterdam; and Kreditbank S.A. Luxembourg in Luxembourg. Payments at the offices referred to in (b) above will be made by check drawn on a bank in New York City or by transfer to a dollar account maintained by the payee with a bank in New York City.

Coupons due November 15, 1983 should be detached and collected in the usual manner. On and after November 15, 1983 interest shall cease to accrue on the Bonds herein designated for redemption.

HILL SAMUEL GROUP PLC  
By: Morgan Guaranty Trust Company  
of New York, Trustee

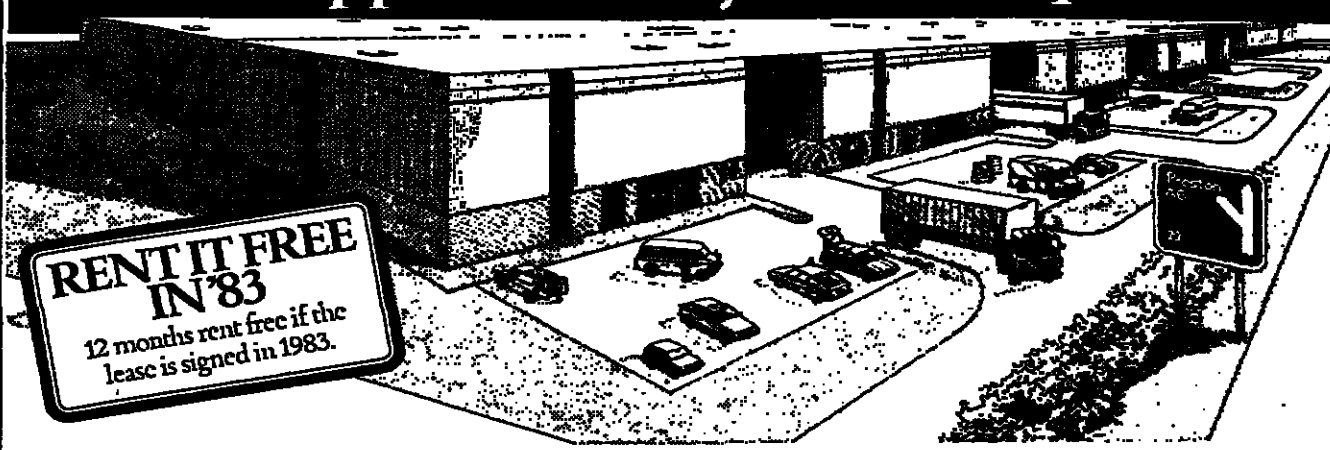
Dated: October 15, 1983

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- Within a 100 mile radius are over 19 million people—more than the combined populations of the countries of Norway, Sweden and Denmark.
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- The M61 and M55 motorways are only 10 minutes distant.
- Manchester Docks are just 50 minutes away by road.

- Liverpool Container Port is 60 minutes away.
- Manchester Airport is under 50 minutes by motorway, and London about 2½ hours on the electric inter-city.

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For more information telephone Bill McNab FRICS, Commercial Director, on Preston 38211. Or write to the address below.



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▲120.213 «Love Story», sculpture by Hans Jörg Limbach, Hombrechtikon, Switzerland

The polyester fibre has conquered the world—and no wonder. For the consumer polyester brought many new and significant advantages: easy care blouses and shirts, outerwear that keeps its shape, and permanent crease finishes.

But it's important to realize one thing—polyester isn't just polyester. It comes in too many qualities for that. Hence the many different fabrics: wovens of pure polyester fibre and blends with synthetics or natural fibres.

There's a lot of good old Swiss philosophy in "Swiss Polyester Grilene":

good enough is never good enough. It is always possible to make things finer, more specialized and more sophisticated. Converters who know what they want appreciate that sort of quality. And the consumer notices the difference too—in sheer wearing comfort, for example.

The processes developed by EMS for the manufacture of polyester and polyamide synthetic fibres have a first-class reputation worldwide. On 5 continents EMS has planned and built production plants which are now manufacturing successfully under licence.

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EMS-CHEMIE AG, CH-7013 Dornach/Emm, Switzerland, Tel. 081 36 01 11, Telex 74 380



NOTICE OF REDEMPTION																							
To the Holders of																							
Bank of Tokyo (Curacao) Holding N.V.																							
(Formerly Curacao Bank Holding N.V.)																							
8 1/4 per cent. Guaranteed Bonds Due 1988																							
NOTICE IS HEREBY GIVEN that Eight Hundred Fifty Three Thousand Dollars (\$853,000) principal amount of the Bank of Tokyo (Curacao) Holding N.V. (formerly Curacao Bank Holding N.V.) 8 1/4 per cent Guaranteed Bonds due 1988 and bearing the following serial numbers have been drawn for redemption on December 1, 1983, at the redemption price of 100% of the principal amount thereof.																							
COUPON BONDS																							
154	187	2185	4740	4421	7225	8038	10437	10948	11449	11950	12451	12952	13453	13954	14455	14956	15457	15958	16459	16960	17461	17962	18463
177	1926	3230	4838	4847	7349	7640	8041	10449	10752	12349	12449	12949	13449	13949	14449	14949	15449	15949	16449	16949	17449	17949	18449
188	1887	3237	4843	6441	7350	7641	8042	10450	10753	12350	12450	12950	13450	13950	14450	14950	15450	15950	16450	16950	17450	17950	18450
244	2497	3291	4844	6442	7351	7642	8043	10451	10754	12351	12451	12951	13451	13951	14451	14951	15451	15951	16451	16951	17451	17951	18451
274	2828	3292	4845	6443	7352	7643	8044	10452	10755	12352	12452	12952	13452	13952	14452	14952	15452	15952	16452	16952	17452	17952	18452
283	2950	3293	4846	6444	7353	7644	8045	10453	10756	12353	12453	12953	13453	13953	14453	14953	15453	15953	16453	16953	17453	17953	18453
327	3278	3294	4847	6445	7354	7645	8046	10454	10757	12354	12454	12954	13454	13954	14454	14954	15454	15954	16454	16954	17454	17954	18454
342	3488	3318	4858	6456	7365	7656	8057	10467	10768	12365	12466	12967	13467	13968	14468	14969	15469	15969	16469	16969	17469	17969	18469
363	3643	3328	4877	6474	7374	7675	8076	10480	10779	12376	12477	12978	13478	13979	14479	14980	15480	15980	16480	16980	17480	17980	18480
418	3940	3835	4980	6574	7389	7690	8129	10521	10824	12419	12520	13021	13521	14022	14523	15024	15525	16026	16527	17028	17529	18030	18531
452	3943	3987	5029	6599	7772	7923	8138	10548	10851	12446													



# SECTION III - INTERNATIONAL MARKETS

## FINANCIAL TIMES

Tuesday October 25 1983

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### WALL STREET

## Convincing rally despite nervousness

U.S. STOCK MARKETS remained nervous yesterday, as investors weighed the implications of last week's sharp rise in M1 money supply and Friday's sell-off in IBM shares, writes Terry Byland in New York.

Leading stocks managed a successful recovery from a poor start, with the help of trading statements from General Motors and Merrill Lynch. But over the broad range of the market, sellers were still in the majority as the session came to an end.

The Dow Jones Industrial average ended a net 0.10 higher at 1248.98 after falling below 1228 during the morning. But there were falls in the indices for the American Stock Exchange and the over-the-counter market where a wide range of the smaller high-technology stocks are traded. Volume on the New York Stock Exchange was only moderate with a turnover of 85.8m shares. Stocks with losses totalled 977 against 589 with gains.

In the credit market, yields consolidated around the higher levels reached late on Friday. The serious and tragic events in Beirut at the weekend also served to depress the mood of the market.

Stock prices opened sharply lower and were pushed down by persistent selling during the first two hours of trading. IBM, whose weakness on Friday triggered off selling over the range of the market, traded up 1 1/4 at \$128 1/4.

Bank shares looked steadier, with Citicorp 1 1/4 up at \$32 1/4 after a sharp fall on Friday when the market was unsettled by rumours about South American debt developments.

At mid-morning, General Motors disclosed the expected strong trading results for the third quarter and this helped to steady the rest of the stock market.

GM, \$1 down while awaiting the third-quarter figures picked up after the announcement to trade at \$78 1/4, a net 5 1/4 higher. Chrysler added 5/8 to 20 1/4 while Ford, also with results due, gained 1 1/4 to \$68.

The oil share sector opened the reporting season with lower profits from Ashland Oil which fell 3/4 to \$28 1/4 and somewhat uninspiring figures from Standard Oil of Indiana which gained \$1 to \$49 1/4.

Hughes Tool, which makes most of the drilling bits for the oil industry, dipped 3/4 to \$20 1/4 after disclosing a \$4m loss for the quarter.

The technology sector had another busy day. Lower profits for the final quarter at Apple Computer were of little further surprise and the stock at \$19 1/4 shed only 1/4.

Hewlett-Packard added 3/4 to \$37 1/4 but TIE Communications gave up another 3/4 to \$25 1/4.

United Airlines, \$1 1/4 up at \$31 1/4 and American Airlines, \$1 1/4 higher at \$32 1/4, maintained the firmer trend of last week but rail stocks shed up to \$1.

Merrill Lynch, the market's largest securities trading house, put on \$1 1/4 to \$31 1/4 after the third-quarter results.

Trading results brought gains in Phibro Salomon at \$28 1/4, Eaton at \$45 1/4, and Ampco Pittsburgh at \$12 1/4. McDonald's, the fast food chain, added \$1 to \$68 1/4 on higher third-quarter earnings.

Treasury Bills were a few basis points below Friday's final quotations with the three-month bill at a 8.89 per cent discount and the six month at 8.89 per cent. The key long bond at 10 1/2%, yielding 11.69 per cent was about half a point below Friday's close.

### EUROPE

## Bourses wait for lead from U.S.

IN RITUAL fashion, most European bourses waited and sought guidance yesterday from Wall Street's reaction to last Friday's bulge in M1 money supply figures, while Middle East events continued to cause concern.

Pending a New York response, Frankfurt was the only market to show signs of determination and the FAZ index of 100 leading shares rose to a new all-time high of 337.27, up 0.15, although the Commerzbank index was 0.5 off last Friday's 23-year peak of 999.5.

Strong demand for luxury car makers saw Daimler-Benz advance DM 40 to DM 702 and BMW rose DM 11 to DM 412 although VW shed DM 2.20 to DM 224.30.

Banks were weak with Deutsche DM 6 lower at DM 313.50, while Commerzbank fell DM 4.50 to DM 175.50 and a capital boost for Bayerische Hypothek forced DM 3 off the shares to DM 288.

Major chemicals lost ground. BASF gave up DM 2.40 to DM 155.50 and Bayer was 70 pf down at DM 155.80.

Domestic bonds and DM-denominated foreign Eurobonds were priced generally lower.

Active trading in Paris left prices mixed despite some confusion over new trading procedures on the bourse and the 1/2 point drop in call money to 12 per cent. The Beirut bombings and U.S. money supply concern dampened any strong sentiment.

Advances included Bouygues Ffr 12 ahead at Ffr 687, while Carrefour was Ffr 30 up at Ffr 1,340, Moët Hennessy was Ffr 20 higher at Ffr 1,320 and Roussel-Uclaf was Ffr 12 firmer at Ffr 622.

Insurance and banking shares were hardest hit in Amsterdam yesterday with noticeable weakness in international stocks.

Amro slipped 30 cents to Ffr 60, Ned-Mid Bank fell Ffr 1 to Ffr 147.5 and ABN incurred a Ffr 3.5 drop to Ffr 364. Royal Dutch was Ffr 1.4 off at Ffr 130.4, KLM with first-half results due next week, lost Ffr 2.7 to Ffr 151.3 and Philips eased Ffr 1.3 to Ffr 46.1.

Sensitivity to Lebanese events and technical factors pushed Milan lower in light trading.

Leading industrials, banks and insurance stocks were among the big losers. Fiat dropped L39 to L2,840, Mediobanca lost L650 to L62,300 and RAS fell L1,400 to L135,500.

Belgian and foreign shares ended mixed to lower in Brussels. Wiremaker Bekaert slipped Bfr 10 to Bfr 2,930.

Chemical shares were firmer with Gevaert up Bfr 5 to Bfr 2,485 and Solvay Bfr 70 higher at Bfr 3,290.

Featureless trading dominated Zurich with prices broadly lower. A sharply higher dollar, M1 rumormongers and provisional results of Swiss parliamentary elections affected sentiment. Some industrials and insurance issues gained ground against the trend.

Rumours of plans for new capital gains taxes persisted in Stockholm as losses mounted in thin trading.

### TOKYO

## Blue-chip issues take a tumble

PRICES GENERALLY moved lower in Tokyo yesterday on bad domestic and overseas news. The only bright spots for stocks were among oils, shippings and speculatives, while prices in the government bond market were steady to slightly lower, writes Shigeo Nishiwaki of Jiji Press.

The Nikkei-Dow Jones market average once more lost its grasp on the 9,300 level, with a sharp 58.82 fall to end at 9,280.16 in extremely light volume of 139.06m shares, the lowest for this year.

The cold water that drenched the market was attributed to an unexpected bulge in the U.S. money supply (announced on Friday), fears of a poor showing on Wall Street after the weekend, the yen's plunge against the U.S. dollar on the Tokyo foreign exchange market, uncertainty over the domestic political situation and the growing tension in the Middle East.

Many large brokerage houses and institutional investors stayed on the sidelines until Wall Street had time to react to the money supply figures and tension in Lebanon.

In the absence of investor interest, blue chips particularly fell on small-lot selling, with Fuji Photo Film losing Y50 to Y1,960, Sony Y80 to Y3,480 and Kyocera Y130 to Y8,670.

Among other quality issues, Hitachi shed Y10 to Y852, Fujitsu Y40 to Y1,230 and Matsushita Electric Industrial Y10 to Y1,630, with gains posted only by Pioneer Electric up Y20 to Y2,820 and Honda Motor Y5 to Y1,000.

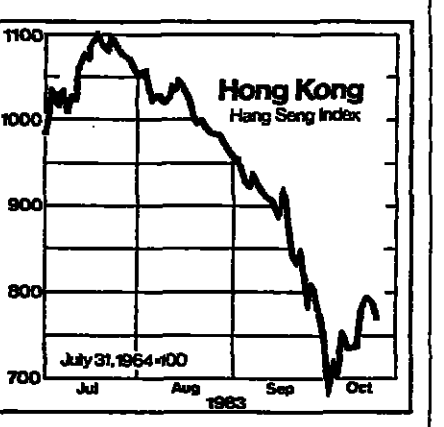
Meanwhile, oils and shipping issues moved higher in reaction to the growing tension in the Middle East. Teikoku Oil put on Y26 to Y837, Nippon Oil Y10 to Y1,170 and Toa Nenryo Kogyo Y10 to Y1,220.

Speculation of higher freight rates sent Japan Line rising Y7 to Y170 and Shinwa Kaiun Y5 to Y157. But non-ferrous metal issues fell, with Sumitomo Mining down Y20 to Y1,330.

Bond prices eased during the morning on a flurry of selling by medium and

small-sized securities firms amid concern about the Beirut situation, but recouped some of the loss on small-lot buying by a trust bank of long-term government bonds with about two years remaining to maturity.

The yield of the benchmark 7.5 per cent long-term government bond maturing in January 1993, rose sharply to 7.79 per cent in the morning from 7.75 per cent at the end of last week, but fell back to 7.76 per cent in the afternoon.



### HONG KONG

## Depressing dollar link

LIGHT TRADING throughout the Far East left most market indices lower yesterday with the Hang Seng index in Hong Kong some 17.13 down at 787.79.

In broadly featureless trading, dealers attributed linking of the local currency to the U.S. dollar as a major depressant on the market, which has now lost over 1,100 points from its all time high of 1,810.2, set in July 1981. Continued uncertainty over future relations with China haunts political and financial sectors alike.

Official data released yesterday indicated that consumer prices in the British colony rose by 2.1 per cent in September.

Hang Seng Bank was one of the larger losers on the day, down HK\$1.5 to HK\$32.5, while Hongkong and Shanghai Banking slipped 5 cents to HK\$36.9 ex dividend. Overseas Trust Bank advanced however by 3 cents to HK\$2.65.

### SINGAPORE

LACKLUSTRE TRADING hit Singapore yesterday, pushing the Straits Times index 3.35 lower to 854.64. The absence of any particular positive factor led the market into a downward drift. One dealer noted resistance would be encountered during a rally once the index reached 965 unless volume picked up.

Banks were generally unchanged or lower whereas properties drifted lower and motor issues were mixed.

Malay Banking was unchanged at S\$9.55, but UOB added 5 cents to S\$5.4. Cold Storage lost 4 cents to S\$4.92 and Straits Trading slipped 5 cents to S\$5.5.

### AUSTRALIA

TECHNICAL FACTORS combined with depressed metals prices to edge Sydney stocks lower in light trading, leaving the All Ordinaries Index at 682.7, a loss of 5.8.

Banks were sharply lower, although retailers, media and transport issues fared better.

BHP was 22 cents off at A\$11.80, Ampol 1 cent lower at A\$1.92, while Woodside shed 3 cents to A\$1.24. CSR dropped 7 cents to A\$3.75 and Western Mining fell 6 cents to A\$3.53.

Elsewhere, the Australian Associated Stock Exchanges have proposed liberalisation of entry requirements into the broking industry.

### SOUTH AFRICA

GOLD SHARES ended mostly firmer in Johannesburg but the market was hesitant in the wake of the weekend events in Beirut.

Prices were generally little changed from opening mark-ups, in line with the firmer bullion price. President Brand added R1 to R46.50 but a few small losses were also noted.

Mining financials, platinum and diamonds mirrored golds with Anglo American adding 20 cents to R19.16, and De Beers 10 cents ahead at R8.95.

### CANADA

OIL and gas stocks in Toronto suffered sharp price setbacks by mid-session yesterday, with metals and mining issues succumbing to the underlying weakness in the resources sector.

All major stock sectors were lower in Montreal, with heavy losses in banks and industrials. Papers and utilities resisted some of the pressure.

KEY MARKET MONITORS				
End Month Figures				
Standard & Poors 500 (Composite)				
1976	1979	1980	1981	1982
100	120	140	160	180
Dow Jones Industrial Average				
1976	1979	1980	1981	1982
600	800	1000	1200	1400
FT-Industrial Ordinary Index (30-Shares)				
1976	1979	1980	1981	1982
600	800	1000	1200	1400
STOCK MARKET INDICES				
NEW YORK				
DJ Industrials	1248.98	1248.98	1031.46	
DJ Transport	583.29	590.30	439.37	
DJ Utilities	138.07	138.02	121.54	
S&P Composite	165.99	165.95	138.83	
LONDON				
FT Ind Ord	685.3	689.8	604.6	
FT-A All-share	428.87	430.93	374.78	
FT-A 500	464.53	466.54	413.94	
FT-A Ind	418.96	420.87	382.50	
FT Gold mines	520.8	516.0	406.1	
FT Govt secs	81.43	81.60	83.37	
TOKYO				
Nikkei-Dow	9260.16	9318.98	7324.04	
Tokyo SE	675.97	680.98	547.46	
AUSTRALIA				
All Ord	682.7	688.5	518.9	
Metals & Mins.	507.8	512.9	416.9	
AUSTRIA				
Credit Aktien	54.39	54.35	47.36	
BELGIUM				
Belgian SE	124.77	125.24	98.64	
CANADA				
Toronto Composite	2422.3	2425.2	1803.4	
Montreal Industrials	430.49	430.71	326.47	
Combined	411.44	412.29	309.3	
DENMARK				
Copenhagen SE	191.57	193.08	92.41	
FRANCE				
CAC Gen	139.9	139.7	100.00	
Ind Tendence	147.7	147.9	118.4	
WEST GERMANY				
FAZ-Aktien	337.27	337.12	235.82	
Commerzbank	999.5	1000.0	713.8	
HONG KONG				
Hang Seng	787.79	784.92	832.88	
ITALY				
Banca Comm.	183.79	185.42	166.66	
NETHERLANDS				
ANP-CBS Gen	139.9	141.2	95.9	
ANP-CBS Ind	114.3	115.4	74.4	
NORWAY				
Oslo SE	208.03	210.42	108.43	
SINGAPORE				
Straits Times	854.64	857.99	728.72	
SOUTH AFRICA				
Gold	733.3	727.3	764.0	
Industrials	905.0	905.1	702.1	
SPAIN				
Madrid SE	closed	121.62	100.55	
SWEDEN				
J & P	1387.98	1413.71	765.96	
SWITZERLAND				
Swiss Bank Ind	341.2	343.5	266.8	
WORLD				
Capital Int'l	180.0	180.3	147.4	
GOLD (per ounce)				
Oct 24	Oct 24	Oct 24	Oct 24	Oct 24
London	\$386.125	\$386.125	\$386.125	\$386.125
Frankfurt	\$395.00	\$395.00	\$395.00	\$395.00
Zurich	\$394.50	\$394.50	\$394.50	\$394.50
Paris (frang)	\$394.14	\$394.14	\$394.14	\$394.14
Luxembourg (frang)	\$394.50	\$394.50	\$394.50	\$394.50
New York (Oct)	\$394.30	\$394.30	\$394.30	\$394.30
CURRENCIES				
U.S. DOLLAR				
(London)	Oct 24	Previous	Oct 24	Previous
\$	2.0085	2.0085	3.91	3.98
DM	233.25	232.35	390	349.25
Yen	7.353	7.3525	11.825	11.85
SwFr	2.1175	2.0955	3.1775	3.155
Guilider	2.9255	2.904	4.395	4.3825
Lira	1586.25	1572.5	2378.5	2381
Bfr	53.25	52.72	79.85	79.17
CS	1.23225	1.23125	1.843	1.849
STERLING				
(London)	Oct 24	Previous	Oct 24	Previous
£	1.4995	1.4995	1.502	1.502
INTEREST RATES				
Euro-currencies (three month offered rate)				
£	9%	9%	9%	9%
SwFr	4 1/4%	4 1/4%	4 1/4%	4 1/4%
DM	5%	5%	5 1/4%	5 1/4%
FFr	13%	13%	13%	13%
FT London Interbank fixing (offered rate)				
3-month U.S.S	9%	9%	9%	9%
6-month U.S.S	9%	9%	9%	9%
U.S. Fed Funds	9%	9%	9%	9%
U.S. 3-month Cds	9.25	9.25	9.25	9.25
U.S. 3-month T-bills	8.66	8.66	8.66	8.66
U.S. BONDS				
Treasury				
Oct 24	Price	Yield	Price	Yield
10% 1985	99 1/2	10.54	99 1/2	10.58
11% 1990	99 1/2	11.54	99 1/2	11.49
11% 1993	101 1/2	11.83	101 1/2	11.58
12 2013	102 1/2	11.59	102 1/2	11.83
Corporate				
Oct 24	Price	Yield	Price	Yield
AT & T	64.23	11.65	95	11.45
10% June 1990	68 1/2	10.50	69 1/2	10.40
3% July 1990	76 1/2	12.05	76 1/2	12.05
8% May 2000	76 1/2	12.05	76 1/2	12.05
Xerox	92.83	11.95	94	11.70
10% March 1993	91	12.25	91	12.10
10% May 1993	91	12.25	91	12.10
Federated Dept Stores	87.132	12.25	88 1/2	12.05
10% May 2013	96	12.25	96	12.05
11.80 Feb 2013	96	12.25	96	12.05
Alcoa	96.16	12.75	97 1/2	12.55
12% Dec 2012	96.16	12.75	97 1/2	12.55
FINANCIAL FUTURES				
CHICAGO				
U.S. Treasury Bonds (CBT)	Latest	High	Low	Prev
8% 32nds of 100%	71-03	72-23	71-00	72-16
December	91.07	91.11	91.08	91.26
U.S. Treasury Bills (IMM)	December	91.07	91.11	91.08
1m points of 100%	90.40	90.44	90.38	90.58
December	90.40	90.44	90.38	90.58
LONDON				
Three-month Eurodollar	90.27	90.28	90.24	90.45
1m points of 100%	90.27	90.28	90.24	90.45
20-year National Gilt	105-28	107-28	106-22	107-25
105-28	107-28	106-22	107-25	
COMMODITIES				
(London)				
Oct 24	Oct 24	Oct 24	Oct 24	Oct 24
Silver (spot fixing)	\$42.20p	\$42.20p	\$42.20p	\$42.20p
Copper (cash)	\$197.50	\$197.50	\$197.50	\$197.50
Coffee (Nov)	\$182.00	\$182.00	\$182.00	\$182.00
Oil (spot Arabian light)	\$28.55	\$28.55	\$28.55	\$28.55

### LONDON

## Early fall is sustained

LEADING SHARES failed to recover from an early mark-down in London as investors stayed out of the market in anticipation of Wall Street's sharp early fall.

The Financial Times Industrial Ordinary index which was 3.7 lower at 10am, eased further after hours to close 4.5 down at 684.8.

The market was dominated by overseas events. The implications of Friday's rise in the basic U.S. money supply measure, M1, the Beirut bombings, which heighten Middle East tension, and the Latin American debt situation were all considerations.

The recently firm gilt edged market met a more cautious approach. Optimism about domestic rates cooled and longer dated gilts soon shed 1/4 or so before buyers ventured in.

Closing falls among the longer gilts stretched to 1/2 while shorter dated stocks ended around 1/4 easier. Details, Page 29; Share Information Service, Pages 30-31.



"Stop whining, Potts. If the board wants faster customer service, then it's as good a way as any..."

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## AMERICAN STOCK EXCHANGE COMPOSITE CLOSING PRICES

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Continued on Page 25

## NEW YORK STOCK EXCHANGE COMPOSITE CLOSING PRICES

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**Continued on Page 28**

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## AMERICAN STOCK EXCHANGE CLOSING PRICES

## NEW YORK CLOSING PRICES

# Indices

## NEW YORK DOW JONES

	Oct 24	Oct 21	Oct 20	Oct 19	Oct 18	Oct 17	1983		Since Completion
							High	Low	High
Industrials	1248.98	1249.99	1251.92	1249.75	1250.81	1248.77	1272.15 (7/18)	174.30 (1/18)	41.22 (2/16)
Transport	593.29	590.3	591.26	593.99	595.47	591.92	594.24 (7/18)	174.30 (1/18)	52.23 (2/16)
Utilities	139.67	138.62	138.34	138.99	137.33	138.2	140.86 (7/18)	118.48 (2/16)	18.05 (2/16)
Trading vol 1980/87	8575	8164	8690	10778	9186	7773	-	-	-
							Oct 14	Oct 7	Sept 30
and div yield %							4.41	4.39	4.51
									Year Ago Approx
									5.49

## STANDARD AND POORS

	Oct 24	Oct 21	Oct 20	Oct 19	Oct 18	Oct 17	1983		Since Completion
							High	Low	High
Industrials	187.08	187.08	188.25	188.09	188.4	185.48	193.22 (2/18)	154.95 (2/18)	130.22 (2/18)
Composite	185.99	185.95	186.99	186.73	187.81	179.43	178.88 (2/18)	126.34 (2/18)	178.88 (2/18)
							Oct 19	Oct 12	Oct 5
and div yield %							3.52	3.85	2.50
and P/E Ratio							14.45	14.73	14.51
and Dividend Yield							11.38	11.87	11.21

## NYSE ALL COMMON

	Oct 24	Oct 21	Oct 20	Oct 19	1983	
					High	Low
-	-	-	-	-	442.62 (15.5)	78.71 (24.1)

## RISKS AND FALLS

	Oct 24	Oct 21	Oct 20	Oct 19
Issues Traded	1972	1988	1954	1954
Rises	605	585	655	655
Falls	977	979	899	899
Unchanged	330	393	394	394

## CENTRAL

	Oct 24	Oct 21	Oct 20	Oct 19	1983	
					High	Low
Industrials	438.97	438.71	437.97	432.6	432.98/9.9	328.12/11.1
Composite	411.13	412.29	415.56	413.81	411.29/12.9	318.45/1.9
DOW JONES	2423.1	2425.2	2442.1	2405.3	2448.32/5.9	1994.84/1.1

## U.S. INDICES: CLOSING VALUES, YESTERDAY'S CANADIAN INDICES: LATEST AVAILABLE

	Oct 24	Oct 21	Oct 20	Oct 19	Oct 18	Oct 17	Oct 16	Oct 15	Oct 14	Oct 13	Oct 12	Oct 11	Oct 10	Oct 9	Oct 8	Oct 7	Oct 6	Oct 5	Oct 4	Oct 3	Oct 2	Oct 1	Oct 31	Oct 30	Oct 29	Oct 28	Oct 27	Oct 26	Oct 25	Oct 24	Oct 23	Oct 22	Oct 21	Oct 20	Oct 19	Oct 18	Oct 17	Oct 16	Oct 15	Oct 14	Oct 13	Oct 12	Oct 11	Oct 10	Oct 9	Oct 8	Oct 7	Oct 6	Oct 5	Oct 4	Oct 3	Oct 2	Oct 1	Oct 31	Oct 30	Oct 29	Oct 28	Oct 27	Oct 26	Oct 25	Oct 24	Oct 23	Oct 22	Oct 21	Oct 20	Oct 19	Oct 18	Oct 17	Oct 16	Oct 15	Oct 14	Oct 13	Oct 12	Oct 11	Oct 10	Oct 9	Oct 8	Oct 7	Oct 6	Oct 5	Oct 4	Oct 3	Oct 2	Oct 1	Oct 31	Oct 30	Oct 29	Oct 28	Oct 27	Oct 26	Oct 25	Oct 24	Oct 23	Oct 22	Oct 21	Oct 20	Oct 19	Oct 18	Oct 17	Oct 16	Oct 15	Oct 14	Oct 13	Oct 12	Oct 11	Oct 10	Oct 9	Oct 8	Oct 7	Oct 6	Oct 5	Oct 4	Oct 3	Oct 2	Oct 1	Oct 31	Oct 30	Oct 29	Oct 28	Oct 27	Oct 26	Oct 25	Oct 24	Oct 23	Oct 22	Oct 21	Oct 20	Oct 19	Oct 18
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	Oct. 24	Oct. 21	Oct. 10	Oct. 1	High	1982	Low
<b>AUSTRALIA</b>							
All Ord. (11/1.92)	532.7	555.5	556.0	579.5	725.7 (15.5)		492.9 (4.1)
Gold 1982 (7/11.8)	527.5	512.5	515.5	535.1	514.5 (5.5)		511.5 (4.1)
<b>AUSTRIA</b>							
Grdt. Aktien (2/1.82)	\$4.50	\$4.75	\$4.55	\$4.82	\$5.81 (5.5)		48.42 (15.2)
<b>BELGIUM</b>							
Belgian Sec. (5/12.52)	134.77	135.34	135.75	135.07	134.45 (1.52)		130.50 (4.1)
<b>DEMARK</b>							
Copenhagen SE (5/1.82)	181.57	185.05	185.17	191.75	194.53 (1.52)		175.00 (4.1)
<b>FRANCE</b>							
CAC General (12/1.82)	138.5	(4)	129.7	140.8	141.5 (17.75)		86.7 (3.1)
Ind. Tendence (11/12.82)	147.3	(4)	140.5	142.7	150.7 (17.75)		83.9 (4.1)
<b>GERMANY</b>							
DAX Aktien (7/12.52)	327.7	327.7	334.15	334.3	327.7 (11.15)		341.35 (1.15)
Commerzbank (Dec1982)	288.5	1004.5	594.5	592.8	592.8 (11.15)		727.5 (25.1)
<b>HONG KONG</b>							
Hong Kong Bank (5/17.82)	767.78	754.52	756.11	754.34	1126.94 (21.7)		895.95 (4.70)
<b>ITALY</b>							
Italian Comm. Sec. (7/7.72)	155.72	155.45	155.15	152.12	114.56 (21.5)		160.45 (7.1)
<b>JAPAN</b>							
Nikkei Dow (15.5/82)	1952.15	1573.51	1515.15	1515.35	1545.55 (15.15)		1503.15 (25.1)
Tokyo Sec. New (4/1.82)	575.57	551.55	572.55	575.55	659.55 (7.15)		574.51 (25.1)
<b>NETHERLANDS</b>							
AMP-CBS General (1972)	128.5	141.5	142.5	141.5	144.5 (7.15)		120.5 (4.1)
AMP-CBS Indust. (1972)	114.5	115.5	115.1	115.1	115.4 (7.15)		103.5 (4.1)
<b>NORWAY</b>							
Oslo Sec. (4/1.82)	208.55	210.42	210.55	209.84	212.75 (10.25)		209.01 (4.1)
<b>SINGAPORE</b>							
Singapore Times (1982)	554.54	557.35	552.55	552.55	552.57 (15.15)		712.55 (5.1)
<b>SOUTH AFRICA</b>							
Gold 1982 (11/1.82)	(4)	227.5	255.4	251.5	709.5 (11.1)		154.5 (3.1)
Industrial (1982)	(4)	205.1	225.5	215.7	715.5 (11.1)		70.5 (3.1)
<b>SPAIN</b>							
Madrid Sec. (7/12.82)	(4)	131.52	121.55	121.55	121.55 (7.15)		65.52 (11.1)
<b>SWEDEN</b>							
Stockholm & P. (11.1.82)	1357.55	1413.71	1425.35	1411.35	1570.85 (6.1)		1359.75 (3.1)
<b>SWITZERLAND</b>							
Swissbank Corp. (15/1.78)	541.2	545.5	542.5	542.5	547.5 (4.1)		535.5 (4.1)
<b>World Banks</b>							
Capital Int. (11/7.72)	—	128.5	128.5	129.7	128.5 (15.75)		124.5 (3.1)

(a) Saturday Oct. 22 : Japan Nikkei Dow 5119.05 TSE 605.55.  
 Note values of all indices are 100 except Australia All Ordinary and Netherlands 500. NYSE All Commodities Standard and Poore-10, and Toronto-100, on plus 40 Utilities, 40 Financials and 20 Transports, 5 Closed, 5 Unavailable.

(\*) Saturday Oct. 22: Japan Nikkei-Dow 5318.98 TSE 680.88.  
Base values of all indices are 100 except Australia All Ordinaries and Metals—500, NYSE All Common—60; Standard and Poor—10; and Toronto—1,000 the last named based on 1975. \* Excluding bonds. † 400 Industrial, ‡ 400 Industrial plus 40 Utilities, 40 Financials and 20 Transports, c Closed, u Unavailable

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## LONDON STOCK EXCHANGE

## MARKET REPORT

## Overseas events dampen investment enthusiasm and market trade quietly lower

## Account Dealing Dates

\*First Declared Last Account  
Dealings Close Dealings Day  
Oct 17 Oct 27 Oct 28 Nov 7  
Oct 21 Nov 10 Nov 11 Nov 21  
Oct 14 Nov 24 Nov 25 Dec 5  
\*New-time\* Dealings may take  
place from 9.30 am two business days  
earlier.

London equity markets traded quietly as the final leg of the current trading Account got under way yesterday. Institutional investors showed no inclination to commit fresh funds after last week's foray on brighter economic news. U.S. speculation showed no sign of growth in the third-quarter, as were particularly encouraging, as were the latest CSO findings on UK trends which preceded the Chancellor's prediction of lower inflation next year.

Interest yesterday was dominated by other overseas events. The implications of Friday's unexpected rise in the basic U.S. money supply measure, M1, the Beirut bombings, which could only heighten Middle East tension and the Latin American debt situation were all poignant considerations—Wall Street last Friday was subjected to persistent rumours that a South American country was on the verge of defaulting.

Subsequently, leading shares in London never really recovered from an initial mark-down on anticipations that the New York market would fall sharply at its reopening. Values did exactly that early yesterday and the Dow Jones index was soon 17 points down, a movement which took blue chip industrial shares to their lowest of the day.

The FT Industrial Ordinary share index, 3.7 lower at 10 am and still recording the same loss five hours later, eased further after-hours to close 4.5 down at 688.3.

Last week's surprise expansion in U.S. money supply and the subsequent sharp fall in bond prices as short-term interest rates there rose prompted a more cautious approach to the recently firm gilt-edged market.

Recent optimism about domestic rates cooled and longer-dated gilts soon shed 4 or so before buyers ventured in. Demand was satisfied fairly quickly, however, and the tone eased as operators awaited the U.S. bond market's reaction to details of the U.S. Government's huge quarterly financing operation, scheduled to be announced on Wednesday. Closing falls among longer gilts finally stretched to 1, while shorter-dated stocks ended around 1/4 easier.

After last week's flurry of

speculative excitement, which followed Alliance's bid for Eagle Star, interest in Composite Insurance contracted. Eagle Star touched 320p before closing only a couple of pence dearer at 327p following weekend publication of the formal offer document. Alliance jumped 9 points to 190. Elsewhere, Hogg Robinson, at 123p, lost 4 of Friday's speculative rise of 7 which accompanied rumours that the Kuwaiti Investment Office had sold its 13.07 per cent stake in the company.

The two newcomers to the Unlisted Securities Market made somewhat disappointing debuts. Intec Group, designers and suppliers of micrographic products, opened at the placing price of 91p and slipped to 87p, while Edinburgh Fund Managers, placed at 75p, opened at 81p and drifted back to 75p.

Rotapay encountered further scrappy selling and shed 3 1/2 to 87p; the offer-for-sale price was 100p.

The continued absence of investment support led to another lifeless session among leading shares. Elsewhere, a little excitement was provided by Highland Distilleries, which advanced to 91p before settling with a net gain of 4 at 90p following the 22 per cent preliminary profits expansion, increased dividend and encouraging tenor of the chairman's statement. Cluden closed a shade easier, 24 1/2 to 150p.

The FT Industrial Ordinary share index, 3.7 lower at 10 am and still recording the same loss five hours later, eased further after-hours to close 4.5 down at 688.3.

International debt worries resurfaced to undermine the major clearing banks. Prices were marked lower at the outset and continued to retreat on sporadic bouts of selling. Barclays lost 10 to 438p at 10 am, while Midland fell 9 to 388p and NatWest to 577p. Elsewhere, Graysdays gave up to 8 at 132p on lack of support and Standard Chartered slipped to 5 to 418p.

Dealings in Bank L-unit resumed, at 1134, following the reconstruction and capital changes.

After last week's flurry of

## FINANCIAL TIMES STOCK INDICES

	Oct. 24	Oct. 21	Oct. 20	Oct. 19	Oct. 18	Oct. 17	Year ago
Government Secs.	91.45	91.60	91.38	91.19	91.23	91.28	93.37
Fixed Interest	94.90	94.96	94.56	94.50	94.51	94.29	94.58
Industrial Ord.	688.3	689.8	691.0	678.4	678.3	677.6	604.5
Gold Mines	520.5	516.0	510.0	521.0	538.1	541.9	406.1
Ord. Div. Yield	4.94	4.93	4.91	4.99	4.98	4.98	4.79
Earnings, Yld. (Full)	9.81	9.77	9.75	9.90	9.98	9.98	10.68
P/E Ratio (net)	12.73	12.78	12.81	12.66	12.66	12.66	11.25
Total	17,402.1	17,383.3	16,888.2	17,204.2	17,204.2	17,204.2	16,474
Equity turnover (%)	182.35	170.58	210.09	187.58	171.58	188.73	170.9
Share bargains	13,606	15,811	15,088	14,882	16,558	20,794	96.4
Shares traded (m.)	110.8	106.0	121.2	101.5	115.7	99.0	100.0

10 am 888.1 11 am 888.3 Noon 888.5 1 pm 888.9  
2 pm 888.1 3 pm 888.3 4 pm 888.5 5 pm 888.9  
Basis 100 Gov. Secs. 11/28. Fixed Int. 10/28. Industrial 1/7/28.  
Gold Mines 12/1/28. SE Activity 1974.  
Latest index 91.46 9025.  
Nil=11.97.

## HIGHS AND LOWS S.E. ACTIVITY

	1983		'Since Completion			Oct. 21	Oct. 9
	High	Low	High	Low			
vt. Secs.	83.50 (11/10)	77.00 (24/1)	121.4 (8/185)	49.18 (4/13)	Daily Gift Edged Bargains.....	151.2	13
ed Int.....	84.96 (11/10)	79.05 (1/2)	150.4 (2/1147)	60.58 (6/5)	Equities Value .....	82.9	36
Ord.....	740.4 (12/4)	899.4 (12/1)	740.4 (4/4)	49.4 (1/1)	Day Forge Gift Edged Bargains.....	153.5	15
and Mines	81.0 (1/2)	51.0 (30/10)	78.7 (15/28)	45.5 (2 1/2/11)	Equities Value .....	87.1	10
						364.4	



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Position \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_  
\_\_\_\_\_

Post code \_\_\_\_\_

**80% CASH AGAINST INVOICES**

**FT2**



115	170	77	Archer (H) 1950	78	1	1	15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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	Stock	Price	+ -	Net	Cm	%	P/E
125	Barnhart E1	150	-1	19.0	1.8	8.8	77
126	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
127	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
128	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
129	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
130	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
131	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
132	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
133	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
134	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
135	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
136	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
137	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
138	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
139	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
140	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
141	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
142	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
143	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
144	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
145	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
146	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
147	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
148	De L. Inc. 100	176 1/4	0	18 1/2	1.8	8.7	77
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Adrian	45	TradeHouse	16	Chemical Cons.	58
Al	16	Cons. Gold	28	Cons. Gold	28
		Turner & Newall	7	Loribro	9
Arker Sidd	28	Unitever	70	Rio T. Zinc	62

A selection of Options traded is given on the London Stock Exchange Report page

**"Recent Issues" and "Rights" Page 27**



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## Money services must follow the contours of the new landscape

**THE FINANCIAL "landscape" has changed fundamentally, a process which will not easily be reversed, so purveyors of financial services must adjust to their new surroundings.**

**'Banks will face intense competition from the non-banks ... there will be a scramble for product innovation'**

Mr Leland Prussia, chairman of the Bank of America, outlined the new picture at the Financial Times conference, The Financial Services Revolution, in London yesterday.

The changes include the growing interdependence of markets, structural changes in the economy and developments on the international scene such as Third World debt and the tendency towards trade protectionism.

"We need to play a greater role in intermediation and trade facilitation because these will increase growth," said Mr Prussia.

Technology "continues to be the driving competitive force in the 1980s" and banks will face heightened competition from non-banks in their traditional markets. There will be a scramble for better and faster product innovation," he said.

Mr. Lamar Smith, chief economist of the U.S. Senate Banking Committee, said the pressure for deregulation of the U.S. financial services and banking industries was coming from competition by "non-bank banks," state initiatives and new technology.

Deregulation in the U.S. was attempting to restore the competitive balance between the highly regulated banking industry and new competitors such as Gulf and Western and Dreyfus, the investment company, which had opened banks even though they themselves were not banking companies.

Mr. Smith said Senator Jake Garn, the committee chairman, would propose a new Bill in early November to give the banks greater freedom to compete in new fields. The Bill would be broader than the Financial Institutions Deregulation Act (Fida) proposed by the Rea-

## 'Banks will face intense competition

**from the non-banks** On the other hand, organisations such as American Express allowed banks to do business with them without losing their identities. before banks got a 49% stake in the upstart market which seemed to be more productive.

... there will be

**a scramble**

**for product innovation'**

Administration in the summer would attempt to give everyone the financial services industry a red interest in it.

He noted that the Fida would expand the definition of a bank to include non-banks within banking supervision, would require banks to hold companies if they wanted to diversify and would allow banks such areas as insurance and property investment.

Dr. Smith said it was unlikely that a law would be passed in the future to remove geographic barriers to competition from very much larger foreign firms.

If London was to compete it had to show that its markets were liquid enough to attract trade. Mr Rothschild called for changes including the abolition of stamp duty on share dealings, discontinuing the

James Larkin, president of American Express Europe, claimed stock exchange "closed shop" and ending the single capacity system. It was important, he said, that banks did not lose the initiative in

Mr Mark Weinberg, deputy chairman and joint managing director of Hambro Live Assurance, said financial institutions should be in the

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## COMMODITIES AND AGRICULTURE

## U.S. producer lifts zinc price

BY JOHN EDWARDS

THE ZINC market received a further boost last night when U.S. producer Amax announced it was lifting its domestic selling price in the U.S. by 3 cents to 48 cents a pound, effective immediately.

This followed announcements by several producers that they were increasing their official European zinc quotations from \$880 to \$925 a tonne.

The move by Noranda, the big Canadian zinc producer, last week to lift its European price to \$935 has been rejected by other producers, including Cominco of Canada, which have preferred to follow Penarroya's decision on Friday to go to \$925.

Billiton, which said last week it was "prepared to accept" a base price of \$915 has also gone up to \$925.

On the London Metal Exchange the three months zinc price closed 25.5 down at \$803.75 a tonne but recovered in after hours trading to \$805, close to the nine-months high reached on Friday.

Zinc stocks held in the London Metal Exchange fell last week by 1,400 tonnes reducing total holdings to 108,400 tonnes.

Other base metal markets failed to respond to the worsen-

ing Lebanon crisis following the Beirut bombings over the week end. Prices opened higher in early dealings, but soon fell back when buying interest faded out.

On the London Metal Exchange, higher grade cash copper closed 28 lower at \$257.5 a tonne.

The lack of reaction in gold and silver markets to the Beirut bombings triggered off further selling in copper. The market was also depressed by another rise of 4,275 tonnes in copper stocks held in the LME warehouses, lifting total holdings to a five-year peak of 409,775 tonnes.

Tin stocks increased too by 200 to 41,950 tonnes and LME silver holdings by 320,000 to 37,690,000 oz.

There was considerable disappointment in the lead market that warehouse stocks dropped by only 6,350 to 191,725 tonnes last week.

Some traders had been forecasting a decline of 20,000 tonnes in view of higher prices in the U.S., attracting shipments across the Atlantic.

Aluminium stocks fell again, by 5,950 to 236,075 tonnes, but prices fell ground on speculative selling. Nickel stocks fell by 372 to 25,506 tonnes.

## Concern at cocoa decline

LIBREVILLE—The Cocoa Producers' Alliance (CPA) wound up a five-day meeting here, expressing concern at lower production among member countries.

A joint statement said delegates from the CPA's 11 members reviewed the recent trends on world markets and prospects in the years ahead, and

"expressed concern at lower output by member nations."

It is estimated that Ivory Coast's output for 1983/84 could be around 360,000 tonnes, up from 355,000 the previous season.

Ghana is expected to produce some 180,000 tonnes in 1983/84, down from 180,000 in the recently concluded harvest.

## UK vessels increase fishing catch

BRITISH fishing vessels increased their catch last night to 775,000 tonnes, a 4 per cent rise on the 745,000 tonnes the previous year. The value of the catch increased by 14 per cent — from £228m in 1981 to £261m in 1982.

Details were published yesterday in the 1983 edition of Sea Fisheries Statistical Tables, available from HMSO for £10.

Meanwhile, water authority officials have blamed farmers for the dramatic decline in numbers of young salmon on the Torridge River in North Devon. They say slurry and silage has killed thousands of fish and deterred others from spawning in the Torridge.

SEPTEMBER milk production is estimated at 111.7m litres, up from 111.5m litres at the same time last year.

EEC PROPOSALS for cutting farm output could lead to farmers becoming "inefficient and disenchanted," Milk Marketing Board chairman Sir Stephen Roberts criticised the negative approach of politicians who thought only of controlling supply and did nothing to stimulate demand.

BRITISH scientists have developed a new race of super-sows. The sows, all pure bred large white or Landrace pigs, have been producing 33 piglets a year—13 piglets a year higher than the national average.

INDONESIA has named a provisional executive board for a new National cooking oil producers' association.

A NEW SET of specifications will apply to Indonesia's standard rubber from December. It will lay down maximum levels for nitrogen content.

PHILIPPINE coconut exports fell 7 per cent in the first nine months of this year to 1,29m tonnes, compared with 1,39m tonnes in the same 1982 period.

## Mill closures highlight Caribbean sugar industry crisis

THE decision of the Jamaican Government to close its seven sugar mills illustrates a deepening crisis within the cane sugar industry in the Commonwealth Caribbean.

The industry, once vital to the region's economy, is faltering under the weight of still increasing debts, caused by weak markets, poor weather and by inefficiency. Production has been falling steadily.

Except for Belize, the crop which has just ended in the region has been a bitter harvest. Production targets have been missed, and by more than the proverbial mile. The low output could not have been more inopportune. National coffers are depleted. Even in the case of BHS has 80 growers based in the Torridge River in North Devon. They say slurry and silage has killed thousands of fish and deterred others from spawning in the Torridge.

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country this year yielded 114,000 tonnes, an increase of 2,000 tonnes on last year. But there are problems. Tate and Lyle, which runs the industry through its subsidiary Belize Sugar Industries, wants to reduce its 80 per cent shareholding to 15 per cent. The sugar cane farming community is reported to be uneasy at the plans.

This has not prevented plans for increasing yields in the next crop. An effort to rehabilitate fields affected by smut disease is under way, aided by a £2.2m loan from the Commonwealth Development Corporation. About 15,000 acres will be treated.

At the other end of the Caribbean, shortfalls are predicted for Guyana, whose rated capacity of 450,000 tonnes per year was slightly reduced last year with the closure of two of the country's 10 mills.

The industry is hoping that the country's two crops will yield 300,000 tonnes. The first crop returned 56,000 tonnes.

## Canute James explains why production is falling

against a 100,000 tonnes target, but there are hopes for duplicating last year's second crop of 200,000 tonnes. Barring strikes and poor weather, the second crop should reach this target.

To the north, the abysmal slump in production in Trinidad and Tobago continues. This year's target of 102,000 tonnes was missed by 24,500 tonnes. The crop yielded 2,000 tonnes less than last year's actual output. It was affected by a late start as field workers protested at a delay in payments for the previous crop. This was compounded by widespread arson which destroyed hundreds of acres of cane.

The industry has not updated its figure of two crops ago when it was losing about \$800 on

every tonne milled. The Government's concern at the viability of the sector was indicated by the conversion of 13 per cent of cane fields to food production.

But the pace of this programme is likely to be determined by a social dilemma—about 20 per cent of the country's work force is dependent on the sugar industry.

The Barbados crop also failed to meet its target. The yield, at 85,000 tonnes, was 5,000 tonnes off the mark. This was the same level of output last year, which was described by the industry's leaders as being the worst in the past three decades. There was nothing to show for the \$10m in support into the sector last year, in an effort to lift milling to 120,000 tonnes, which the sector says it needs to break even.

The \$140m accumulated debt of the industry in Jamaica, which was inflated by a \$28m loss on this year's crop, proved

too heavy. The state-owned National Sugar Company, in closing its books, promised a phased repaying after eight weeks. But industry sources say only about three factories will be restarted.

The island has a national capacity of 400,000 tonnes per year, but the closures will mean a late start for the next crop, and with reduced capacity, this year's 195,000 tonnes output will not be matched. The yield this year's 195,000 tonnes output will not be matched. The yield this year's 195,000 tonnes output will not be matched.

Mr. Percival Broderick, the Agriculture Minister, has said the Government will not abandon the industry, despite the growing debt. "This intramural crisis is explained by two factors: sugar last year shored up Jamaica's depressed hard currency reserves by \$102m according to the minister; and the industry employs 11,000 workers, about 1 per cent of the work force in a country where unemployment, according to official figures, is 27 per cent."

## Salad growers plan co-op

By Barbara Daxell

HOME GROWN SALADS (HGS), a co-operative controlled by growers, is to be launched on January 1.

HGS has 80 growers based in East Anglia. They come from the specialised production areas at Foxnah, Fulney, Fen Drayton and Newbourn and were previously members of the Land Settlement Association.

It will market lettuce, celery, tomatoes, peppers and courgettes—worth £1m at present levels.

HGS, which will share the Canterbury offices and back-up facilities of Home Grown Fruits, will be applying for registration as a marketing and collecting centre under the new National Farmers' Union scheme.

## Malaysia urged to raise rubber output

BY WONG SULONG IN KUALA LUMPUR

A COMMITTEE, comprising Malaysian and foreign rubber experts, has recommended to the Malaysian Government to take steps "without delay" to increase rubber production in view of strong demand for natural rubber.

The committee, which was commissioned by the Government last April to make an in-depth study on the future of rubber to the year 2000, yesterday submitted its final report to Datuk Paul Leong, the Primary Industries Minister.

Datuk Leong said the report projected total rubber demand in 1990 and 2000 to be in the region of 15m and 18m tonnes respectively, compared to a demand of 11.6m tonnes in 1982.

For natural rubber, demand is expected to be about 5m tonnes in 1990 and at least 6m

tonnes in 1982.

The Minister said that despite the optimism expressed in the report, Malaysia was taking a cautious view, and would only reconsider re-evaluating its "dynamic rubber production policy" once the current high stocks were reduced, and prices were attractive in the medium term.

Commercial stocks held in Malaysia have declined by about 100,000 tonnes to 199,445 tonnes between February and July but there are still another 270,000 tonnes held by the Inro buffer-stock manager.

Tax concessions were given once again to the Malaysian rubber, pepper and tin industries in the 1984 budget, but exporters of crude palm kernel oil will pay a higher duty. The threshold price for the

## March date for pigmeat market

By John Edwards

OPENING DATE for the proposed London pigmeat futures market has been set for March 10, it was announced yesterday.

Mr. Paul Elms, chairman of the Government committee of the new market, said it had been supported by all sectors of the industry.

The market is to be based in the Baltic Exchange, next door to the highly successful potato futures market. It will have six months and trade in lots of 50 carcasses.

The Grain and Feed Trade Association, which is backing the pigmeat futures market, also announced yesterday that a quality grade A, will start trading on the home-grown grade futures market on November 7.

## PRICE CHANGES

In tonnes unless stated otherwise	Oct. 24 1983	+ or -	Month ago
Aluminium	21050	-	21050
Free Mkt.	1570/1580	-	1575/1585
Copper	2597.5	-8.00	21024
3 months	2581.75	-7.25	21915
Cash Cathode	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Cash Anode	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Lead	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Nickel	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Palladium	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Silver	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Tin	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Wheat	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Barley	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Maize	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Soyabean	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Wheat	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Barley	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Maize	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915
Soyabean	2597.5	-8.75	21915
3 months	2581.75	-7.25	21915

## LONDON OIL SPOT PRICES

CRUDE OIL—FOB (per barrel)	Latest	Change
Arabian Light	25.00	+0.05
Arabian Heavy	24.50	+0.05
North Sea (Forties)	24.50	+0.05
North Sea (Brent)	24.50	+0.05
African (Brent)	24.50	+0.05

PRODUCTS—North West Europe	Latest	Change
Premium gasoline	24.50	+0.05
Gas oil	24.50	+0.05
Heavy fuel oil	24.50	+0.05

## GOLD MARKETS

Gold rose \$24 to \$394.3964 on the London bullion market. It opened at the same level, and was fixed at \$394.3964 in the morning, and \$394.3964 in the afternoon. The metal touched a peak of \$394.3974, and a low of \$394.3944.

In Paris the 12 1/2 kilo gold bar was fixed at FF 101,150 per kilo (\$394.14 per ounce) in the afternoon, compared with FF 101,150 (\$394.14) in the morning, and FF 100,500 (\$393.85) Friday afternoon.

In Frankfurt the 12 1/2 kilo bar was fixed at DM 33,310 per kilo (\$394.14 per ounce), against DM 32,785 (\$393.01), and closed at \$394.3964, compared with \$394.3964.

Gold Bullion (fine ounce)	Oct. 24	Oct. 21
Close	1394.3964	1394.3964
Opening	1394.3964	1394.3964
Morning fixing	1394.3964	1394.3964
Afternoon fixing	1394.3964	1394.3964

Gold Coins Oct. 24		Oct. 21	Oct. 23
1/2 Krug	1394.3964	1394.3964	1394.3964
1/4 Krug	1394.3964	1394.3964	1394.3964
1/8 Krug	1394.3964	1394.3964	1394.3964
1/16 Krug	1394.3964	1394.3964	1394.3964
1/32 Krug	1394.3964	1394.3964	1394.3964
1/64 Krug	1394.3964	1394.3964	1394.3964
1/128 Krug	1394.3964	1394.3964	1394.3964
1/256 Krug	1394.3964	1394.3964	1394.3964
1/512 Krug	1394.3964	1394.3964	1394.3964
1/1024 Krug	1394.3964	1394.3964	1394.3964
1/2048 Krug	1394.3964	1394.3964	1394.3964
1/4096 Krug	1394.3964	1394.3964	1394.3964
1/8192 Krug	1394.3964	1394.3964	1394.3964
1/16384 Krug	1394.3964	1394.3964	1394.3964
1/32768 Krug	1394.3964	1394.3964	1394.3964
1/65536 Krug	1394.3964	1394.3964	1394.3964
1/131072 Krug	1394.3964	1394.3964	1394.3964
1/262144 Krug	1394.3964	1394.3964	1394.3964
1/524288 Krug	1394.3964	1394.3964	1394.3964
1/1048576 Krug	1394.3964	1394.3964	1394.3964
1/2097152 Krug	1394.3964	1394.3964	1394.3964
1/4194304 Krug	1394.3964	1394.3964	1394.3964
1/8388608 Krug	1394.3964	1394.3964	1394.3964
1/16777216 Krug	1394.3964	1394.3964	1394.3964
1/33554432 Krug	1394.3964	1394.3964	1394.3964
1/67108864 Krug	1394.3964	1394.3964	1394.3964
1/134217728 Krug	1394.3964	1394.3964	1394.3964
1/268435456 Krug	1394.3964	1394.3964	1394.3964
1/536870912 Krug	1394.3964	1394.3964	1394.3964
1/1073741824 Krug	1394.3964	1394.3964	1394.3964
1/2147483648 Krug	1394.3964	1394.3964	1394.3964
1/4294967296 Krug	1394.3964	1394.3964	1394.3964
1/8589934592 Krug	1394.3964	1394.3964	1394.3964
1/17179869184 Krug	1394.3964	1394.3964	1394.3964
1/34359738368 Krug	1394.3964	1394.3964	1394.3964
1/68719476736 Krug	1394.3964	1394.3964	1394.3964
1/137438953472 Krug	1394.3964	1394.3964	1394.3964
1/274877906944 Krug	1394.3964	1394.3964	1394.3964
1/549755813888 Krug	1394.3964	1394.3964	1394.3964
1/1099511627776 Krug	1394.3964	1394.3964	1394.3964
1/2199023255552 Krug	1394.3964	1394.3964	1394.3964
1/4398046511104 Krug	1394.3964	1394.3964	1394.3964
1/8796093022208 Krug	1394.3964	1394.3964	1394.3964
1/17592186044416 Krug	1394.3964	1394.3964	1394.3964
1/35184372088832 Krug	1394.3964	1394.3964	1394.3964
1/70368744177664 Krug	1394.3964	1394.3964	1394.3964
1/140737488355328 Krug	1394.3964	1394.3964	1394.3964
1/281474976710656 Krug	1394.3964	1394.3964	1394.3964
1/562949953421312 Krug	1394.3964	1394.3964	1394.3964
1/1125899906842624 Krug	1394.3964	1394.3964	1394.3964
1/2251799813685248 Krug	1394.3964	1394.3964	1394.3964
1/4503599627370496 Krug	1394.3964	1394.3964	1394.3964
1/9007199254740992 Krug	1394.3964	1394.3964	1394.3964
1/18014398509481984 Krug	1394.3964	1394.3964	1394.3964
1/36028797018963968 Krug	1394.3964	1394.3964	1394.3964
1/72057594037927936 Krug	1394.3964	1394.3964	1394.3964
1/144115188075855872 Krug	1394.3964	1394.3964	1394.3964
1/288230376151711744 Krug	1394.3964	1394.3964	1394.3964
1/576460752303423488 Krug	1394.3964	1394.3964	1394.3964
1/1152921504606846976 Krug	1394.3964	1394.3964	1394.3964
1/2305843009213693952 Krug	1394.3964	1394.3964	1394.3964
1/4611686018427387904 Krug	1394.3964	1394.3964	1394.3964
1/9223372036854775808 Krug	1394.3964	1394.3964	1394.3964
1/18446744073709551616 Krug	1394.3964	1394.3964	1394.3964
1/36893488147419103232 Krug	1394.3964	1394.3964	1394.3964
1/73786976294838206464 Krug	1394.3964	1394.3964	1394.3964
1/147573952589676412928 Krug	1394.3964	1394.3964	1394.3964
1/295147905179352825856 Krug	1394.3964	1394.3964	1394.3964
1/590295810358705651712 Krug	1394.3964	1394.3964	1394.3964
1/1180591620717411303424 Krug	1394.3964	1394.3964	1394.3964
1/2361183241434822606848 Krug	1394.3964	1394.3964	1394.3964
1/4722366482869645213696 Krug	1394.3964	1394.3964	1394.3964
1/9444732965739290427392 Krug	1394.3964	1394.3964	1394.3964
1/18889465931478580854784 Krug	1394.3964	1394.3964	1394.3964
1/37778931862957161709568 Krug	1394.3964	1394.3964	1394.3964
1/75557863725914323419136 Krug	1394.3964	1394.3964	1394.3964
1/151115727451828646838272 Krug	1394.3964	1394.3964	1394.3964
1/302231454903657293676544 Krug	1394.3964	1394.3964	1394.3964
1/604462909807314587353088 Krug	1394.3964	1394.3964	1394.3964
1/1208925819614629174706176 Krug	1394.3964	1394.3964	1394.3964
1/2417851639229258349412352 Krug	1394.3964	1394.3964	1394.3964
1/4835703278458516698824704 Krug	1394.3964	1394.3964	1394.3964
1/9671406556917033397649408 Krug	1394.3964	1394.3964	1394.3964
1/19342813113834066795298816 Krug	1394.3964	1394.3964	1394.3964
1/38685626227668133590597632 Krug	1394.3964	1394.3964	1394.3964
1/77371252455336267181195264 Krug	1394.3964	1394.3964	1394.3964
1/154742504910672534362390528 Krug	1394.3964	1394.3964	1394.3964
1/309485009821345068724781056 Krug	1394.3964	1394.3964	1394.3964
1/618970019642690137449562112 Krug	1394.3964	1394.3964	1394.3964
1/1237940039285380274899124224 Krug	1394.3964	1394.3964	1394.3964
1/2475880078570760549798248448 Krug	1394.3964	1394.3964	1394.3964
1/4951760157141521099596496896 Krug	1394.3964	1394.3964	1394.3964
1/9903520314283042199193993792 Krug	1394.3964	1394.3964	1394.3964
1/19807040628566084398387987584 Krug	1394.3964	1394.3964	1394.3964
1/39614081257132168796775975168 Krug	1394.3964	1394.3964	1394.3964
1/79228162514264337593551950336 Krug	1394.3964	1394.3964	1394.3964
1/158456325028528675187103900672 Krug	1394.3964	1394.3964	1394.3964
1/316912650057057350374207801344 Krug	1394.3964	1394.3964	1394.3964



## CURRENCIES, MONEY and CAPITAL MARKETS

## FOREIGN EXCHANGES

## Money supply rise boosts dollar

Two factors dominated the foreign exchange yesterday. The first was the rise of \$2.40 in U.S. M1 money supply announced Friday, against expectations of a fall in the region of \$1bn, and the second was renewed instability in the Middle East. Both contributed to a firmer dollar.

Any hopes that another fall in M1 would encourage the Federal Reserve to ease its monetary stance were dashed, while the news of the Beirut bombings, however disturbing to the U.S. in general, also had the effect of underpinning the dollar on the foreign exchange.

Sterling received support from events in the Middle East, particularly the claim by Iraq that it had escalated the war with Iran by mining part of the Gulf.

The dollar rose to DM 2.6065 from DM 2.5825 against the

D-mark; FF 7.9550 from FF 7.8925 against the French franc; SwFr 2.1175 from SwFr 2.0995 in terms of the Swiss franc; and ¥232.55 from ¥232.55 against the Japanese yen.

**STERLING** — Trading range against the £1 in 1983 is 1.5235 to 1.4540. September average 1.4991. Trade-weighted index 83.6 against 83.7 at noon, 83.7 the morning, 83.3 at the previous close, and 82.2 six months ago. The pound has tended to move with the dollar recently, although a decline against Continental currencies is probably welcomed. It has also reacted to Middle East tension, and its effect on oil supplies, highlighting the pound's status as a petrocurrency.

Sterling improved to DM 3.91 from DM 3.88; FF 11.9250 from FF 11.85; SwFr 3.1775 from SwFr 3.1550; and ¥350 from

¥349.25. The pound traded in a narrow range of 1.4950 to 1.5005 against the dollar. It opened at \$1.4950-1.4990, and closed at \$1.4990-1.5000, a fall of 25 points on the day.

**DEUTSCHEMARK** — Trading range against the dollar in 1983 is 2.5715 to 2.5326. September average 2.5653. Trade-weighted index 127.1 against 126.6 six months ago. The Deutsche mark has improved after falling to its lowest level for nearly 10 years against the dollar in August. As U.S. money supply figures have improved attention has switched towards German money supply growth, which is causing some concern, and encouraging the Bundesbank to keep interest rates firm. This, coupled with the German economy, is likely to support the Deutsche mark against the EMS partners and the dollar.

## EMS EUROPEAN CURRENCY UNIT RATES

Country	ECU	Central bank rate	% change from central bank rate	% change from October 24	Divergence
Belgium	44.9005	45.9999	+2.42	+1.33	+1.5447
Denmark	8.4740	8.4636	-0.12	-0.28	-0.1424
Germany	2.2494	2.2367	-0.57	-0.91	-0.1663
France	6.5610	6.5610	0.00	0.00	0.0000
Greece	3.4000	3.4000	0.00	0.00	0.0000
Italy	1.3660	1.3660	0.00	0.00	0.0000
Netherlands	2.2037	2.2037	0.00	0.00	0.0000
Portugal	20.4800	20.4800	0.00	0.00	0.0000
Spain	166.3660	166.3660	0.00	0.00	0.0000
Sweden	13.7603	13.7603	0.00	0.00	0.0000
Switzerland	2.0371	2.0371	0.00	0.00	0.0000
UK	1.4930	1.4930	0.00	0.00	0.0000

Changes are for ECU, therefore positive change denotes a weak currency. Adjustment calculated by Financial Times.

## OTHER CURRENCIES

Oct. 24	\$	£	Notes
Argentina Peso	22.38-22.45	14.95-14.95	
Australia Dollar	1.6300-1.6310	1.0375-1.0380	
Brazil Cruzeiro	1.35-1.36	1.03-1.04	
Canada Dollar	1.24-1.25	0.75-0.76	
Denmark Krone	8.47-8.48	5.65-5.66	
France Franc	6.56-6.57	3.40-3.41	
Germany Mark	2.25-2.26	1.37-1.38	
Greece Drachma	340-341	20.48-20.49	
India Rupee	15.5-15.6	1.35-1.36	
Iran Rial	10.3-10.4	0.55-0.56	
Israel Sheqel	1.8-1.9	0.35-0.36	
Japan Yen	232.5-232.6	1.35-1.36	
South Korea Won	180-181	0.0001-0.0002	
Malaysia Dollar	2.35-2.36	1.35-1.36	
Thailand Baht	50-51	0.02-0.03	
Saudi Arab. Riyal	3.75-3.76	0.02-0.03	
South Africa Rand	1.5-1.6	0.02-0.03	
U.A.E. Dirham	2.6-2.7	0.02-0.03	

\* Selling rates.

## CURRENCY RATES

Oct. 24	Bank rate	Special Drawing Right	European Currency Unit
Starting	81.7000	0.7777	0.7777
U.S. \$	1.4990	0.7777	0.7777
Canada \$	0.7500	0.7777	0.7777
UK £	0.7500	0.7777	0.7777
France F	6.5610	0.7777	0.7777
Germany M	2.2367	0.7777	0.7777
Italy L	1.3660	0.7777	0.7777
Netherlands G	2.2037	0.7777	0.7777
Portugal Esc	20.4800	0.7777	0.7777
Spain Ptas	166.3660	0.7777	0.7777
Sweden Kron	13.7603	0.7777	0.7777
Switzerland S	2.0371	0.7777	0.7777
UK £	1.4930	0.7777	0.7777
Yugoslavia D	134-135	0.7777	0.7777

\* C/S/D/R rate for Oct. 21: 1.31147.

## CURRENCY MOVEMENTS

Oct. 24	Bank of England	Morgan Guaranty
Starting	85.5	7.6
U.S. \$	1.4990	0.7777
Canada \$	0.7500	0.7777
UK £	0.7500	0.7777
France F	6.5610	0.7777
Germany M	2.2367	0.7777
Italy L	1.3660	0.7777
Netherlands G	2.2037	0.7777
Portugal Esc	20.4800	0.7777
Spain Ptas	166.3660	0.7777
Sweden Kron	13.7603	0.7777
Switzerland S	2.0371	0.7777
UK £	1.4930	0.7777
Yugoslavia D	134-135	0.7777

Currency changes: average 1982-1983-100. Bank of England index (base average 1975-100).

## THE POUND SPOT AND FORWARD

Oct. 24	Day's spread	Close	One month	% Three months	% Six months
U.S.	1.4990-1.5005	1.4990-1.5000	0.03-0.04	-0.04	-0.04
Canada	1.24-1.25	1.24-1.25	0.02-0.03	-0.03	-0.03
Netherlands	4.37-4.41	4.38-4.40	0.02-0.03	-0.03	-0.03
Belgium	7.95-8.00	7.95-8.00	0.02-0.03	-0.03	-0.03
Denmark	14.12-14.16	14.12-14.16	0.02-0.03	-0.03	-0.03
France	1.25-1.26	1.25-1.26	0.02-0.03	-0.03	-0.03
Germany	3.35-3.36	3.35-3.36	0.02-0.03	-0.03	-0.03
Italy	1.35-1.36	1.35-1.36	0.02-0.03	-0.03	-0.03
Spain	16.5-16.6	16.5-16.6	0.02-0.03	-0.03	-0.03
Portugal	20.4-20.5	20.4-20.5	0.02-0.03	-0.03	-0.03
Sweden	13.7-13.8	13.7-13.8	0.02-0.03	-0.03	-0.03
Norway	10.9-11.0	10.9-11.0	0.02-0.03	-0.03	-0.03
Japan	232.5-232.6	232.5-232.6	0.02-0.03	-0.03	-0.03
South Korea	180-181	180-181	0.02-0.03	-0.03	-0.03
Malaysia	2.35-2.36	2.35-2.36	0.02-0.03	-0.03	-0.03
Thailand	50-51	50-51	0.02-0.03	-0.03	-0.03
Saudi Arab.	3.75-3.76	3.75-3.76	0.02-0.03	-0.03	-0.03
South Africa	1.5-1.6	1.5-1.6	0.02-0.03	-0.03	-0.03
U.A.E.	2.6-2.7	2.6-2.7	0.02-0.03	-0.03	-0.03

Belgian rate is for convertible franc. Financial time 80.80-80.80. Six-month forward dollar 0.25-0.30. 12-month 0.52-0.60.

## THE DOLLAR SPOT AND FORWARD

Oct. 24	Day's spread	Close	One month	% Three months	% Six months
U.S.	1.4990-1.5005	1.4990-1.5000	0.03-0.04	-0.04	-0.04
Canada	1.24-1.25	1.24-1.25	0.02-0.03	-0.03	-0.03
Netherlands	4.37-4.41	4.38-4.40	0.02-0.03	-0.03	-0.03
Belgium	7.95-8.00	7.95-8.00	0.02-0.03	-0.03	-0.03
Denmark	14.12-14.16	14.12-14.16	0.02-0.03	-0.03	-0.03
France	1.25-1.26	1.25-1.26	0.02-0.03	-0.03	-0.03
Germany	3.35-3.36	3.35-3.36	0.02-0.03	-0.03	-0.03
Italy	1.35-1.36	1.35-1.36	0.02-0.03	-0.03	-0.03
Spain	16.5-16.6	16.5-16.6	0.02-0.03	-0.03	-0.03
Portugal	20.4-20.5	20.4-20.5	0.02-0.03	-0.03	-0.03
Sweden	13.7-13.8	13.7-13.8	0.02-0.03	-0.03	-0.03
Norway	10.9-11.0	10.9-11.0	0.02-0.03	-0.03	-0.03
Japan	232.5-232.6	232.5-232.6	0.02-0.03	-0.03	-0.03
South Korea	180-181	180-181	0.02-0.03	-0.03	-0.03
Malaysia	2.35-2.36	2.35-2.36	0.02-0.03	-0.03	-0.03
Thailand	50-51	50-51	0.02-0.03	-0.03	-0.03
Saudi Arab.	3.75-3.76	3.75-3.76	0.02-0.03	-0.03	-0.03
South Africa	1.5-1.6	1.5-1.6	0.02-0.03	-0.03	-0.03
U.A.E.	2.6-2.7	2.6-2.7	0.02-0.03	-0.03	-0.03

UK and Ireland are quoted in U.S. currency. Forward premiums and discounts apply to the U.S. dollar and not to the individual currency. Belgian rate is for convertible franc. Financial time 80.80-80.80.

## EXCHANGE CROSS RATES

Oct. 24	Pound Sterling	U.S. Dollar	Deutsche Mark	Japanese Yen	French Franc	Swiss Franc	Dutch Guilder	Italian Lira	Canada Dollar	Belgian Franc
Pound Sterling	1.0000	1.5000	3.9100	250.00	11.9500	5.1700	2.3700	20.4800	1.3500	79.50
U.S. Dollar	0.667	1.0000	2.608	160.00	7.0600	3.333	1.936	16.6700	0.7500	48.60
Deutsche Mark	0.255	0.384	1.0000	62.50	3.0000	1.936	0.8000	7.4600	0.477	30.48
Japanese Yen	0.004	0.006	0.016	1.0000	34.07	0.019	0.008	0.008	0.007	0.005
French Franc	0.089	0.141	0.333	0.029	1.0000	0.156	0.067	0.067	0.067	0.067
Swiss Franc	0.315	0.478	1.0000	20.48	0.156	1.0000	0.7500	7.4600	0.580	36.36
Dutch Guilder	0.238	0.354	0.8000	79.50	0.156	0.7500	1.0000	0.419	0.315	19.17
Italian Lira	0.040	0.060	0.067	0.008	0.067	0.067	0.067	1.0000	0.075	4.76
Canadian Dollar	0.043	0.064	0.156	0.008	0.067	0.067	0.067	0.075	1.0000	0.7500
Belgian Franc	0.012	0.018	0.043	0.002	0.012	0.012	0.012	0.012	0.012	1.0000

## MONEY MARKETS

## London rates unchanged

UK clearing bank base lending rate 9 per cent (since October 4 and 5). Interest rates remained steady on the London money market yesterday, refusing to react to the surprising rise in U.S. M1 money supply announced on Friday.

In New York the Federal Reserve announced the injection of \$2.5bn in liquidity to the New York banking system when Federal funds were trading at 9 1/2 per cent. The money was made available through repurchase agreements for customer account.

The Bank of England initially forecast a money market shortage of £500m, but this was revised to £400m at noon, and later to £450m. Bills maturing in the week-end, amounting to £225m.

Total help provided by the authorities during the day was £450m.

Before lunch the Bank of England gave assistance of £240m.

through purchases of £134m bank bills in band 2 (15-33 days maturity) at 9 per cent; £22m Treasury bills in band 3 (94-63 days) at 8 1/2 per cent; £28m Treasury bills in band 4 (64-91 days) at 8 1/2 per cent; and £130m bank bills in band 4 at 8 1/2 per cent.

In the afternoon the authorities bought another £20m bills by way of £50m bank bills in band 2 at 9 per cent; £4m bank bills in band 3 at 8 1/2 per cent; and £26m bank bills in band 4 at 8 1/2 per cent.

at Frankfurt call money was unchanged at 5.5 per cent as the Bundesbank allowed excess liquidity to drain from the money market by not replacing expiring currency swaps. These are expected to absorb some DM 500m to DM 400m yesterday and today, and are unlikely to be replaced.

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## FINANCIAL TIMES SURVEY

## World Telecommunications

Suppliers jostle  
for new markets

THE WORLD telecommunications equipment industry is in the grip of powerful structural change. Once a business which was conducted largely behind national borders, manufacturing is increasingly becoming international, as suppliers jostle to exploit new markets while confronting the challenges of growing competition and rapid advances in technology.

The industry is discovering a new zest for strategic alliances, as manufacturers who have traditionally ploughed their separate furrows recognise that it is in their common interest to join forces.

The most dramatic, and highly-publicised, recent example of collaboration was the agreement earlier this year between American Telephone and Telegraph and Philips of the Netherlands, Europe's largest electronics and electrical company, to form a joint venture to sell switching and transmission equipment internationally.

A new pattern of co-operation is developing, which extends beyond the telecommunications industry to include computers and office products. It seems likely that such deals will continue to proliferate over the next few years.

Large scale capital, and often inter-related, forces shaping the realignment of the industry:

● The search for economies of scale: Though the cost of microelectronics components continues to decline, the cost of developing the software needed for the increasingly wide range of sophisticated functions which modern telecommunications systems can perform is rising at least as fast. Writing software is an almost entirely labour-intensive activity which requires highly skilled manpower and is notoriously prone to problems and delays.

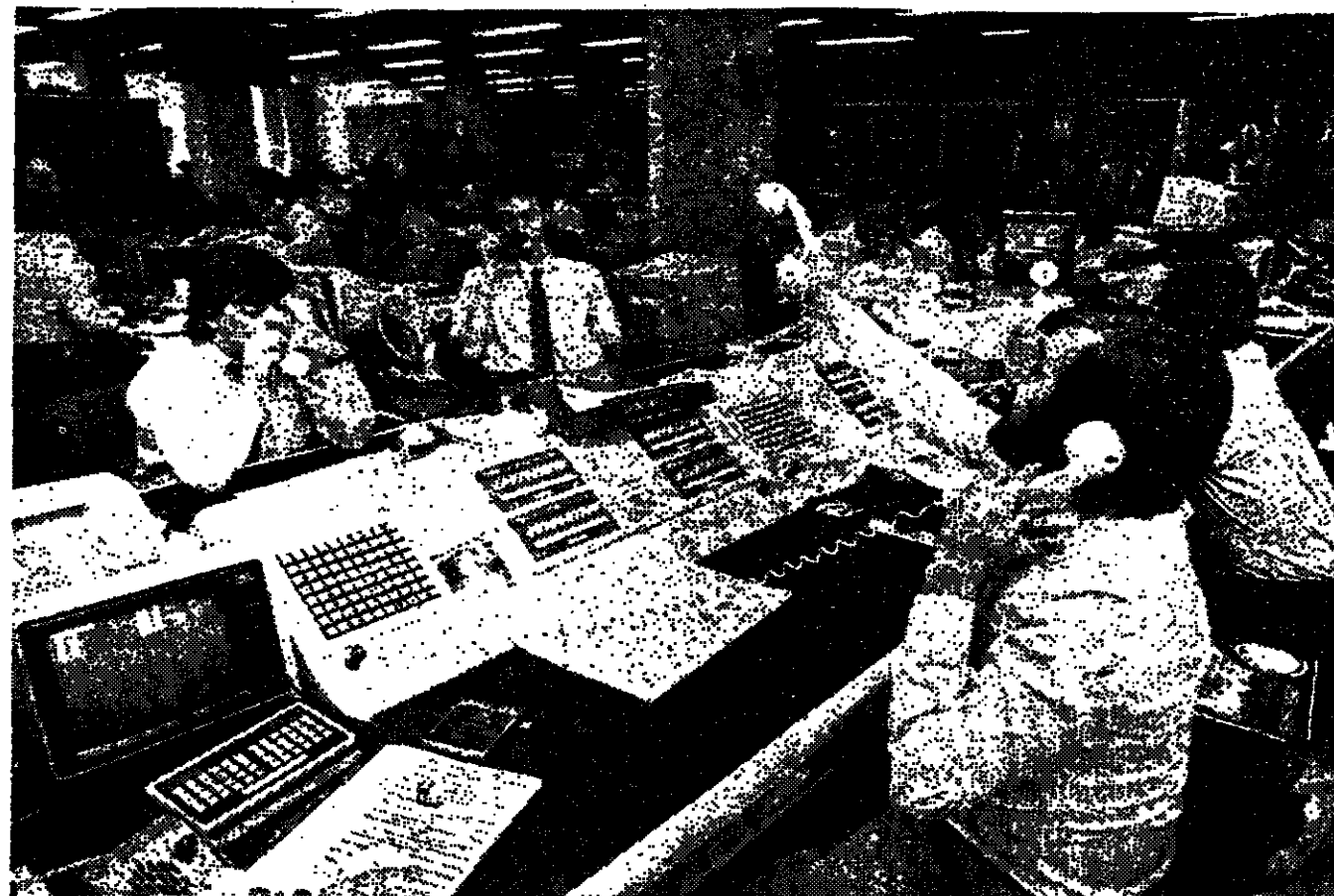
The investment needed to develop a new family of digital public exchanges is now comparable to the sort of sums involved in development of a new commercial airliner. ITT has spent an estimated \$1bn so far on its System 12 switching system, while Canada's Northern Telecom has invested at least \$700m.

By GUY DE JONQUIERES

In many industrialised countries, development costs have been substantially funded—either directly or indirectly—by national telecommunications administrations, which are the principal customers for such equipment. But it is becoming increasingly difficult for them to recoup investments on this scale through domestic orders and exports.

At present, more than a dozen manufacturers are competing to sell digital or semi-digital switching equipment worldwide. Many industry experts believe that the number may be halved over the next decade, as companies decide either to pool their activities or withdraw from the business altogether, as France's Thomson Brandt is doing.

● Gaining market access: Few countries allow totally free access to their telecommunications markets. In Western Europe and Japan, powerful state authorities (PTTs) maintain monopolies over large parts of the equipment market and buy almost exclusively from



The City of London: the financial world's most dense telecommunications market; above, the international dealing room of the London branch of Merrill-Lynch

favoured national suppliers. Foreign companies can unusually breach these barriers only if they have manufacturing operations in the countries concerned or joint ventures with local manufacturers.

The Third World, which for many years was a fairly open market, is also becoming more selective. The governments of developing countries are increasingly trying to build up indigenous telecommunications industries on the back of large equipment orders, and many insist that much of the manufacturing be done locally, in cooperation with local partners. In the U.S., the break-up of

AT & T is expected to open up large parts of the market to manufacturers other than Western Electric, which has traditionally supplied most of the Bell System's needs. But the need to achieve visibility in the U.S. to stay close to the market and to maintain suitable distribution channels makes local manufacturing virtually essential.

● Mastering new technologies: The merger of telecommunications and computing technologies means that industries on either side of the fence must seek new skills. Even IBM has acknowledged as much by linking up with Rolm, a com-

pany only a fraction of its size which has been extremely successful in the PABX market. Acquiring a knowledge of different customer needs is probably equally important. The emerging office automation market is likely to call for an amalgam of data processing and communications expertise and suppliers which are deficient in either field risk being left behind.

Industrial alliances are by no means a cure-all, however. Established companies with a long history of independence tend to develop their own, individual ways of doing things, which are not always easily

compatible, while a big manufacturer which teams up with a small, entrepreneurial, company must take care not to crush the latter's spirit of initiative. In both instances, patient and skilled management may be required to make the most of partnership.

In the interests of their own survival, increasing numbers of companies seem likely to turn to such link-ups in the future. Economic and commercial imperatives clearly point to the development of an increasingly international industry, in which the long-term winners will be those which operate on a worldwide scale.

## PART TWO

Part One appeared yesterday

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● PART ONE of this survey included the following topics: the U.S. market, in the throes of upheaval; the U.S. PABX market; AT&T, a monolith in transition; a shake-out ahead for U.S. equipment suppliers; long-distance and local services in the U.S.

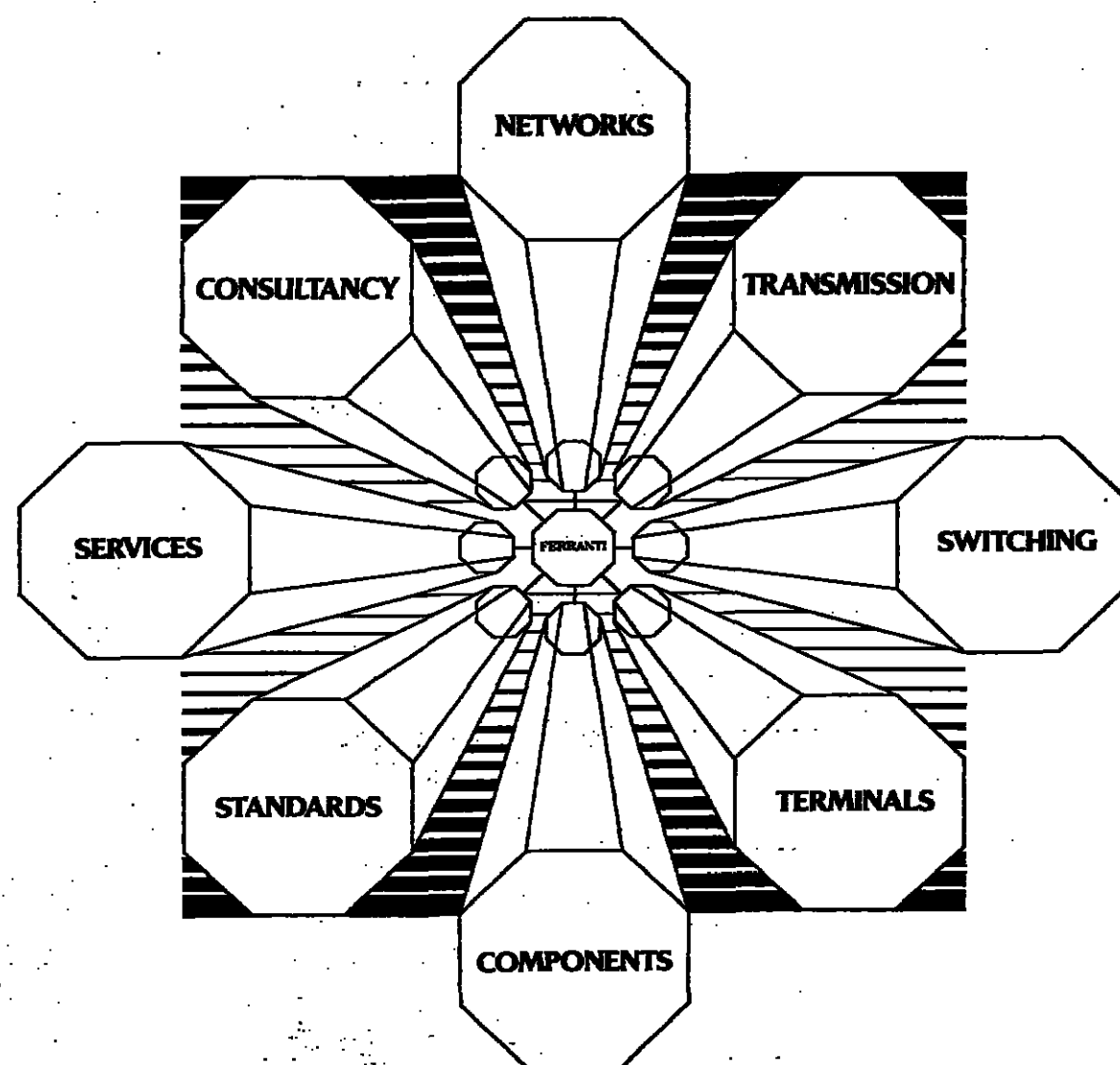
Other articles examined Britain's far-reaching objectives and the re-organisation of British Telecom; the potential for new cable and satellite technology; and the Mercury challenge.

Other features examined the wide scope for joint state ventures in Europe and the investment programmes of European PTTs.

FT writers also reported on latest telecommunication developments in West Germany, France, Italy, the Nordic Countries, Belgium, Netherlands, Canada and the Far East.

● Editorial production of this survey was by Mike Wiltshire; design by Philip Hunt.

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## WORLD TELECOMMUNICATIONS XVIII

Alan Cane examines the progress made towards the office of the future

## The marriage that led to the electronic office

SEVERAL YEARS ago it was called convergence; then office automation, and now it is happening.

Right from the early days of computing, it was clear that a marriage of computing—the power to process information—and telecommunications—the power to move information around—should revolutionise office practice.

Indeed, in some scenarios, it does away with the office altogether as executives work from home or any other place of their choice using portable workstations linked to computers at headquarters by telephone lines.

Those scenarios have faded a little these days, although there has certainly been an increase in the numbers of people who work from home using computers of one sort or another. A recent survey carried out by the British Equipment Trade Association (BETA) showed that almost two thirds of Britain's top companies think they will have a significant number of people working from home by 1988.

There is a balance between the increasing costs of transporting people to work and providing them with services there and the declining costs of the kind of automated equipment which make it possible to work from home; that balance is tipping increasingly towards the home.

### New promise

Already, video teleconferencing—meetings held over telephone lines using closed circuit television techniques—is showing new promise now that the problems of squeezing all the information which has to be transmitted in the comparatively narrow telecommunications line conduit are beginning to be solved. The chief objections to teleconferencing have been the "bandwidth compression" techniques which have tended to produce a degraded image, coupled with the fact that the basic equipment to establish the teleconference has been cumbersome, or inconvenient, or both.

Earlier this year a small Silicon Valley company, Compression Labs, announced a system which seems to have gone a long way to solving the "bandwidth compression" problem, using two techniques called interframe and intraframe

coding which, essentially, ensure that the system transmits only essential new information—only, for example, details of a speaker's movement against a static background.

The company has also developed a compact camera/projection conferencing system costing only \$35,000 that is said to eliminate the need for a specially fitted conference room.

The chief challenge in applying telecommunications to the office is to keep costs to a minimum, and to make the best use of the capacity available.

Which explains much of the excitement in the past few months over local area networks (LANs), ways of linking together all the constituent parts of the automated office—word processors, workstations, computers, facsimile machines, copiers, filestores and printers—so that information and instructions can be passed between them swiftly, accurately and at low cost.

Conventional high speed data transmission techniques used for example to move data between a computer and its terminals are complicated, very expensive and they are physically inconvenient to install in the typical office.

Speaking in London recently, Mr Harold Harrington, a senior systems engineer with Sperry based at Salt Lake City, Utah, pointed out: "The communications techniques which served the minis and the mainframes are not appropriate for intra-office communications. The traditional approaches, primarily a modem and a phone line, fail inside an office because of a lack of flexibility and performance."

So LAN was conceived. There is at present little agreement on whether the most suitable LAN for the office should be based on computer technology with control residing in a separate processor or indeed in the peripheral devices themselves or whether it should be based on the office switchboard—which is itself simply a digital computer these days. The computer approach is favoured by companies such as Xerox, Digital Equipment and Wang. The switchboard approach by the telephone specialists like Rolm, Northern Telecom and, in the UK, Plessey. Three years ago, on balance, the computer solution was more attractive. Now the telecommunications companies have pulled back much of that lead.

According to Mr Harrington: "IBM and Texas Instruments are currently

engaged in a joint development effort which will produce a token passing chip set with a high degree of functionality. It is anticipated that these chips will be used in products announced late in 1983.

Token passing is simply a technique for getting data on and off a LAN. Mr Harrington implied that IBM would announce first a ring—a closed loop where data circulates at high speed and later a bus where information is broadcast to all devices on the LAN at the same time.

He said: "Sperry plans to utilise LAN techniques as the primary means of communication between terminal, micro-computer and mainframe equipment. The LAN of choice for Sperry will be the IEEE token ring (the electronic industry standard). This assumes that the IBM implementation agrees with the IEEE."

### LAN techniques

If there is a difference, IBM's version will become a de facto standard and it is highly probable the IEEE documents would be changed to adopt any differences.

Mr Harrington's comments shed new light on what has been one of the most interesting questions in office automation over the past few years: in which direction will IBM move?

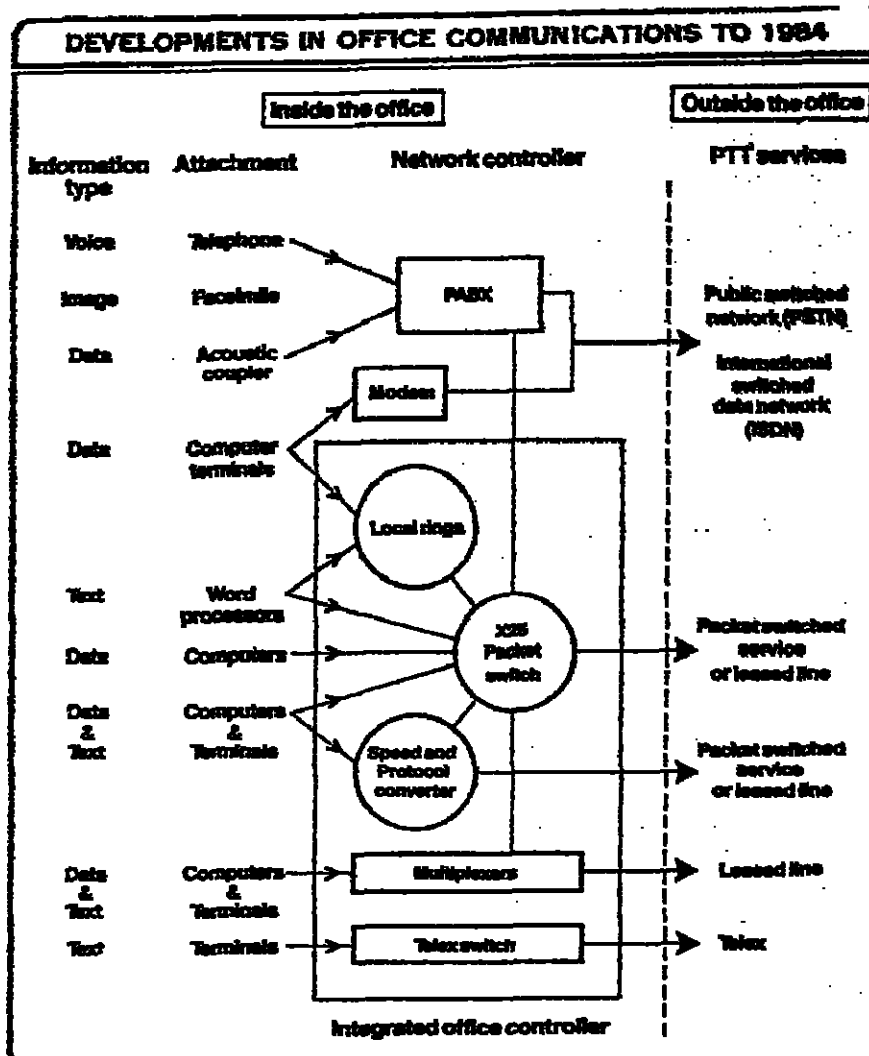
The undisputed leader in mainline data processing, IBM has underlined its power in the aspects of data processing by securing some 30 per cent of the Personal Computer market place within two years of entry.

Its presence in the office has been much more muted. There has been an adequate word processor, a small business system and some not very well regarded software to tie them together.

There has been a powerful office document distributor and printer and various forms of mass storage, but nothing that could be described as a clear direction ahead.

IBM's entry into the Personal Computer market place has been described as taking customers from confusion to safety. The same seems likely to be true of the office market.

After word processing, electronic mail is the most rapidly growing area of office automation. These systems allow two or more people to communicate with each



The chief challenge in applying telecommunications to the office is to keep costs to a minimum, and to make the best use of the capacity available. There is a surge of interest in local area networks (LANs) to link together the constituent parts of the automated office, so that information can be circulated swiftly, accurately and at low cost.

other using electronically transmitted messages.

British Telecom, Gold and Leyland Systems' "Comet" are commercially available examples of electronic mail; many companies with extensive telecommunications networks such as Citibank or Chase Manhattan have their own systems using this technology.

The important feature of such systems is that communication can take place in real time with both sender and recipient at their terminals or over a period of time. Messages are filed in a "mailbox"—the memory of the computer control-

ling the system—to be retrieved when the recipient returns to his or her terminal.

People who use electronic mail swear by it. The paperless office is still as far away as ever but electronic mail does help to cut down paper messages—and more significantly, phone calls.

Electronic mail is simply an extension of message switching, computer techniques applied to teleconferencing could be stored and forwarded.

With the emphasis—as ever in telecommunications—on keeping costs down, Computer and Systems Engineer-

## Forthcoming surveys in the FT

TWELVE SURVEYS on the electronics industries will be published by the Financial Times next year. The survey titles will include:

- The Desktop Revolution
- Manufacturing Automation
- Mobile Communications
- Electronics Companies
- Electronics in Europe
- Computers in Banking and Finance
- Video and Broadcasting
- Software and Services
- Communications in Business
- Electronic Information Services
- Large Computers

### Mobile communications

In particular, the survey on mobile communications will examine recent advances in the technology which offer new freedom and convenience to users and are creating high-growth markets for equipment and services worldwide.

The advent of cellular radio, which uses computer power and modern switching techniques to expand vastly the capacity of mobile communications systems, points to a future when the pocket terminal will be commonplace.

Such terminals will be available almost anywhere—in a car, a taxi or on a street corner—and will be designed not just for voice but for computer data as well.

The advantages will be available not just to busy executives who want to take their offices wherever they go. Cellular radio also promises to extend modern communications to large, lightly-populated areas, particularly in the third world, which is not at present practical to serve by means of traditional terrestrial systems.

## How the world's leading equipment suppliers line up

● American Telephone and Telegraph (U.S.): AT & T is seeking new markets and forming industrial alliances both at home and abroad in an effort to offset the expected loss of near-captive business from its local telephone companies, which it is due to shed early next year.

It has agreed to set up a joint venture with Philips of the Netherlands to sell switching and transmission equipment in Western Europe, the Middle East and parts of Latin America. It is also holding talks on collaboration with—and a possible investment in—Olivetti, Italy's main office products company. It is involved in a joint chip-making venture in South

Korea and has a part-share in a small Irish telecommunications manufacturer.

At home, AT & T is expanding its sales channels to include independent distributors and retail chains such as Sears. It has also licensed several microelectronics manufacturers to use its Unix computer operating system with their products.

● Compagnie Generale d'Electricite (France): Owner of CIT Alcatel, France's leading telecommunications manufacturer, CGE recently deepened its involvement in the industry by an asset exchange with Thomson Brandt, the country's largest electronics and electrical group. CGE is assuming management control over a new state-backed

holding company, to which Thomson has transferred its telecommunications business.

CIT Alcatel and the holding company may eventually merge but whether the reshuffle will enable France's telecommunications industry to remain internationally competitive on its own is uncertain. CIT Alcatel says that it wants to ally itself with foreign partners. It has joined forces with Philips in cellular mobile radio and has held talks with Olivetti, though these have produced no firm results so far.

● L. M. Ericsson (Sweden): Sweden's largest telecommunications group has recently been rapidly expanding its business into new products and territories. It

aims to achieve much of its future growth in information systems. In the past few years it has bought Datasab, the main Swedish computer manufacturer, and Facit, which makes electronic typewriters and other office products.

In the U.S., it owns a joint venture with Atlantic Richfield, the oil group, involved in equipment marketing, software and cable-making. It is working with Honeywell, the American computer manufacturer, to develop in the U.S. voice and data systems based on Ericsson PABXs and Honeywell computers. It also agreed recently to distribute banking terminals through another American computer company, Sperry. Ericsson has a wide range

of international manufacturing activities, including a joint venture in Britain with Thorn EMI.

● GTE (U.S.): The biggest vertically-integrated independent telecommunications company in the U.S., GTE owns a UK equipment manufacturing venture jointly with Ferranti and is collaborating with Italy's state-owned equipment manufacturer. It is also involved in equipment production in Brazil.

● International Business Machines (IBM), U.S.: IBM is expected to build on its alliance with Rolm, in which it bought a minority interest earlier this year, to expand in telecommunications and office automation. Headquartered in California, Rolm

has grown fast in less than a decade to become one of the world's biggest manufacturers of digital private exchanges (PABXs).

IBM owns one-third of Satellite Business Systems, which operates a sophisticated satellite communications network in the U.S. IBM is also seeking telecommunications partners in Western Europe where it makes its own PABXs, but has announced no agreements so far.

● Mitel (Canada): Mitel has agreed to supply a version of its large PABX, the SX-800, to be distributed by ICL, the largest British-owned computer manufacturer.

Mitel was also collaborating with IBM, apparently on de-

velopment of the SX-8000, but this deal was called off earlier this year. Another plan to work with Scientific Atlanta to develop satellite communications systems was also called off.

● Northern Telecom (Canada): Northern Telecom is seeking to broaden its business in the U.S. where it has already received large orders for switching equipment. It is working with computer manufacturers, including Data General and Sperry, to make their equipment compatible with its products. Its large SL-1 PABX is also under licence by Britain's General Electric Company.

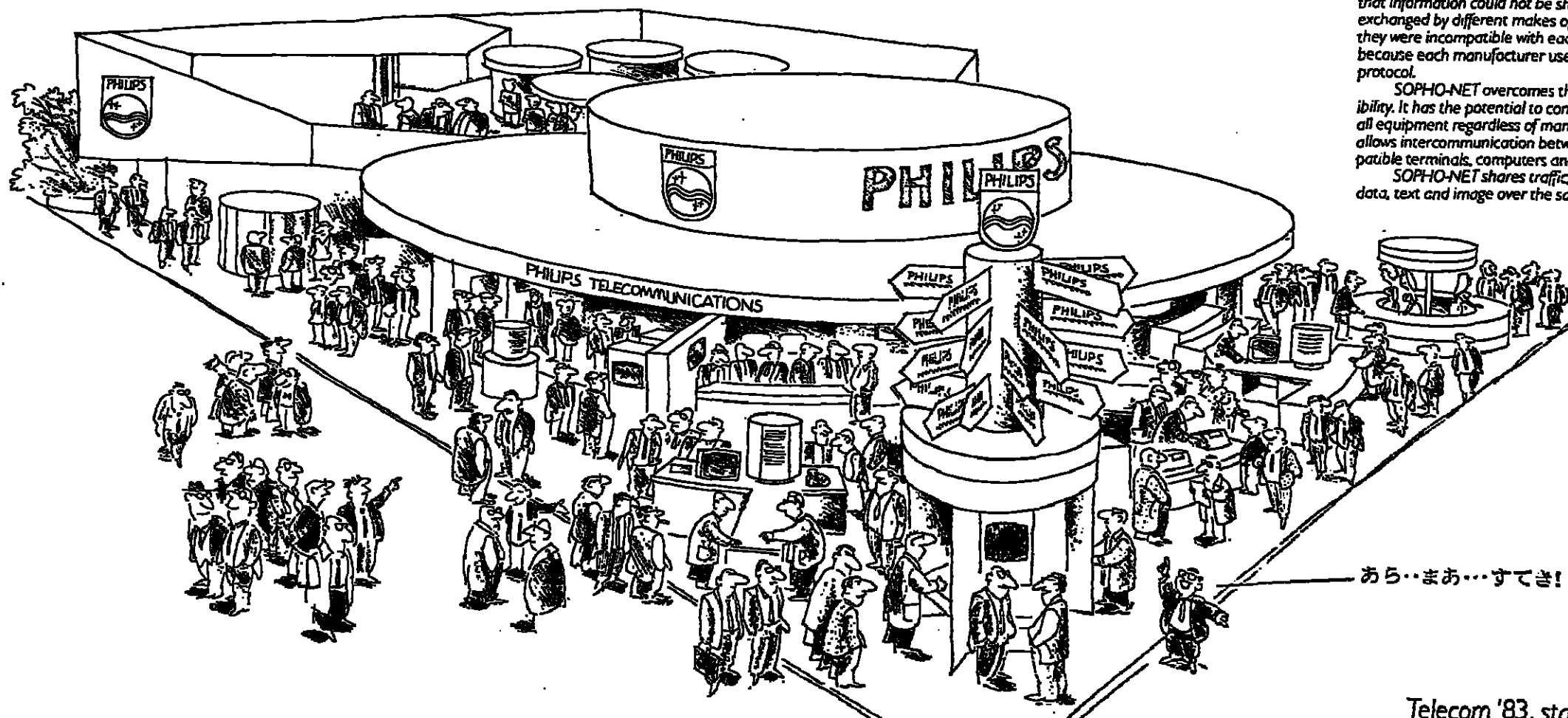
Northern Telecom's U.S. expansion plans have not been trouble-free, however. Its

purchase of two small American data terminal manufacturers in the late 1970s led to big losses, which were only recently brought under control.

● Plessey (UK): Liberalisation of Britain's telecommunications market has led Plessey to venture overseas in an effort to secure a profitable status. It has acquired the public switching business of Stromberg-Carlson, an independent American equipment manufacturer, and has formed links with Scientific Atlanta, a U.S. manufacturer of satellite receivers and cable television equipment.

It has also discussed collaboration with Burroughs, the American computer company.

Philips is bridging the Burroughs, CDC, Wang, CI, Hewlett-Packard, Digital, Sperry, Siemens, IBM, ICL, NCR, Honeywell and Nixdorf communications gap.



Philips has done it again! While everybody else has been talking about the need for a universally compatible wide-area network, Philips has turned it into practicality.

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Until now the stumbling block has been that information could not be shared and exchanged by different makes of equipment; they were incompatible with each other, because each manufacturer used his own protocol.

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With SOPHO-NET your organization may find fewer lines are needed. And with the price of leased lines today, this alone can mean savings of up to 40% in your communications costs.

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SOPHO-NET provides corporate, location and departmental packet-switched networking. Fail-safe and with end-to-end control, SOPHO-NET offers protocol conversions, so all makes of equipment and other networks can communicate with each other; if need be on a worldwide scale and through any existing telecommunications link.

Information can be bounced off satellites, beamed through optical fibre cables, converted to micro-wave radio signals, transmitted along public or leased lines, switched by public and PABX exchanges—and delivered to your terminals and printers.

SOPHO-NET is also the fastest information handler in the world. Nothing can switch and transmit as much information per minute.

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Telecom '83, stand 2.116, Geneva, Oct 26 through Nov 1.

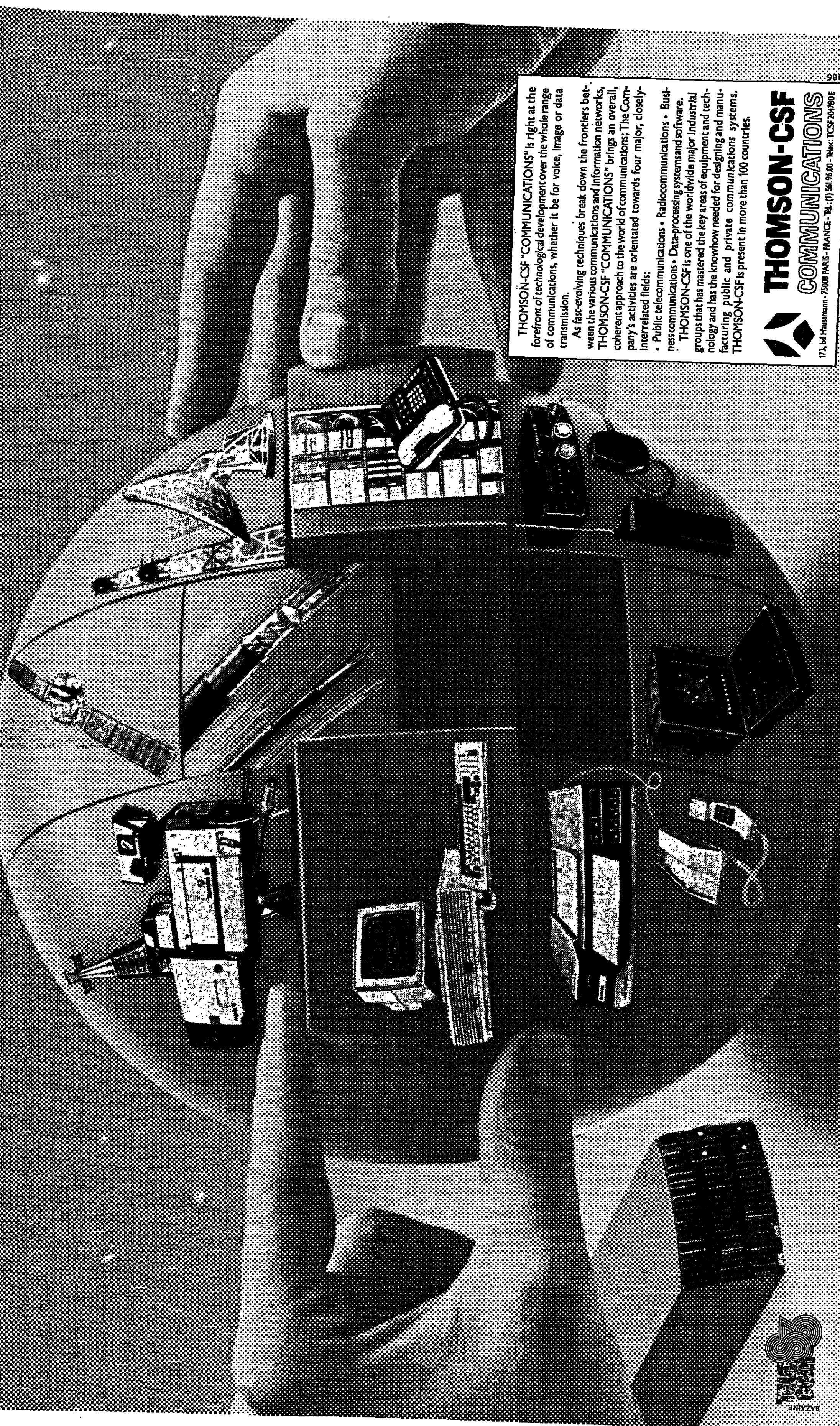
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## WORLD TELECOMMUNICATIONS XX

## CITY BUSINESS SYSTEM

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All operations are controlled by fingertip touch of labelled "keys" which appear on a visual display unit. The touching action is detected by means of a grid of infra-red beams which run over the surface of the screen.

In this way the user can make internal or external phone calls, hold and release them, and also designate a line as private. The system can store up to 5,000 pages of information as well as accessing information that is stored on other computers—this is displayed on the top half of the screen.

Up to a total of 1,024 exchange lines, switchboard extensions or private lines can be connected to the system, and it can cater for a maximum of 512 dealer consoles.

The City Business System is the latest addition to British Telecom's special range of services to business in the capital. A special network, the London Overlay which can carry voice or video or computer data, giving the nation's financial centre the telecommunications services it needs. By providing specialised services and private circuits on demand, national and international organisations are able to operate more efficiently and more competitively.

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## New moves to harmonise international standards

A FEW YEARS ago, when the European Commission first took an interest in the development of telecommunications in Europe, it carried out a study to determine what telecommunications equipment and systems were uniformly standard throughout the European Community. The findings confirmed its worst fears: for among the hundreds of items it looked at, only the humble telephone pole was found to be a reasonably standard product.

For most industries and service supplies the general lack of common international standards is little more than an inconvenience that has to be coped with. In most cases, equipment and systems operate in a national environment and are not required to be interconnected on a real-time basis to equipment and systems in other countries which may have adopted different technical standards. Telecommunications, however, cannot operate in this way. By its very nature it has to be a totally integrated international system which, in the emerging information technology age, must allow subscribers worldwide to communicate one with another, not just by voice but to exchange data and images.

### Complex network

The international telephone network is the largest and most complex interconnected real-time system in the world, linking more than 550m telephone through a series of switches and across transmission media ranging from a pair of copper wires to optical fibres and satellite links. Many other data networks have been, and are continuing to be, introduced along with new mobile radio systems and a vast range of new terminal devices and many new subscriber services. This total system must be able to interconnect freely on an international basis if its full and exciting potential is to be realised.

and this means common international standards and operating procedures and protocols.

International telecommunications standards have, traditionally, been the responsibility of the International Telecommunications Union's technical arm, the International Telephone and Telegraph Consultative Committee (CCITT). The ITU has been relatively successful since it was established in 1865 in creating standards to maintain the flow of international voice communications, although in recent years differing national interpretations of some of its standard recommendations in the data communications area have led to some minor problems of incompatibility. International committees like the CCITT tend to move at a very slow pace, but in the past this has not presented major difficulties because the 15-to-20-year operating life of most equipment gave ample time for the committee to develop and implement standards for successive new generations. The new semiconductor-based technology of the information age, however, has changed all this. Not only is the range of products and services expanding at a very fast rate, because of the sheer pace of technological advance, equipment innovation cycles have become greatly shortened.

Some fears have been expressed that the establishment of standardisation recommendations could delay the introduction of new systems. While this certainly might have occurred in the past in those countries where the traditionally conservative post and telecommunications administrations would have accepted such delays in the new era of increasing liberalisation and pressures from international user and other groups, such delays will be difficult to tolerate.

Two things will occur. Firstly, national administrations will increasingly anticipate standard and plan their future network and subscriber services with, hopefully, sufficient fore-

knowledge to enable them to adjust the tiller and come on course once the CCITT standards are published. Secondly, and potentially a considerably greater threat to harmonisation, there is the competitive industrial factor.

### Benefits

Manufacturing companies obviously gain most benefit from advancing technology if they can be the first in the field with a new product. Companies cannot wait indefinitely for international standards recommendations and, seeing as they do a CCITT apparently unable to adjust to the new demands of the 1980s, some are forging ahead in an attempt to impose their own standards on the rest of the industry by establishing a dominance in a market area which, they hope will, in turn, lead to the establishment of a de facto standard which the CCITT will be forced to accept (the IBM factor).

While there are examples where this has succeeded in the telecommunications field (Siemens can be said to have achieved that result with telex), in most cases the world ends up with numerous incompatible systems which may offer some short-term gains to a manufacturer and some users but in the long-term impose delays and restrictions on the overall growth of the total system.

At the end of the day it is the system user who suffers, either by having to pay more for his equipment or by being unable to benefit to the full from a new system. There are many examples but typical is the current situation arising from the introduction of cellular radio systems in Europe. These systems effectively extend the telephone system for mobile use, allowing subscribers to dial into and receive calls via the public telephone network in the same way as they would as a residential subscriber. There is already a network covering the greater part of Scandinavia which

means that, for example, a Norwegian can drive from Oslo to Helsinki and use his mobile telephone throughout the journey. It would seem logical for European administrations to wish to extend this system throughout the Continent so that subscribers from any one country visiting any other country by car could connect into the telephone network.

It is not to be. Britain has opted for a different system, the French and Germans seem set to opt for yet another system, while the Dutch have chosen the same system as the Scandinavians but have changed the technical parameters and hence rendered it incompatible. So, although there are no major technical problems that could not be overcome, users will now have to wait until the next generation of cellular radio systems arrive in the 1990s and, hopefully, some common standards, before Europe-wide mobile telephony becomes a reality.

### Major efforts

Hopefully many of the problems of the establishment of standards will quickly be resolved. The new secretary general of the ITU and the secretary of the CCITT are fully aware of the problems which exist and are making major efforts to resolve them. There are signs that internationally agreed standards will emerge from the CCITT for the new integrated services digital network, including those for standard multi-purpose interfaces. The focus of harmonisation efforts in Europe is the European Conference of Postal and Telecommunications Administrations (CEPT), founded in 1959 to facilitate cooperation among national administrations. Its five main harmonisation working groups are also making a major contribution within Europe which they believe will set patterns for broader international harmonisation.

Robert Raggett

## World Communications Year has an educational theme

THIS YEAR has been designated World Communications Year by the United Nations.

One of the main objectives of the "Year" is to stimulate the international development of communication and so narrow the gap between the rich technocracies of the West and poor, often isolated communities in the Third World.

In the West, where (despite many critics) the telephone and broadcasting systems are, in general, second to none, the ability to communicate over long distances at a few seconds' notice is taken for granted.

Yet in many other parts of the world the basic tools of communication are lacking—roads are inadequate and, in many cases, telephones do not exist. These deficiencies are a major obstacle to economic development.

The U.N. regards the development of communications throughout the world as an important element in the fight against hunger, unemployment, ignorance and poverty—hence World Communications Year.

Sir Donald Maitland, who is chairman of the UK's national committee for World Communications Year, comments: "As a country, we devote millions of pounds to helping economic development and relieving hardships across the world. Much of this—and other foreign aid—could be far more effective if there existed basic systems for communication between the people in need and the agencies administering relief."

Effective communication has a catalytic effect on economic development, and countries

which don't have good communications are therefore at an immediate economic disadvantage.

"World Communications Year is therefore, despite its grandiose title, a timely and important initiative."

Unlike previous "Years," such as the International Year of the Disabled, World Communications Year is not at first sight an event which lends itself to public involvement.

But the theme for much of World Communications Year is an educational one, with governments and companies in the communications field taking a leading part in helping others to use modern telecommunications equipment more effectively.

### Manufacturers

In the UK, the national world communications group, which represents most leading manufacturers of telecommunications equipment, is co-ordinated by the Department of Industry, which has a vested interest in promoting Britain's technical ability, particularly in the telecommunications field, at home and abroad.

The "Year" is being rounded off in the UK with a one-day conference at the Royal Lancaster Hotel, London, on December 7. This event is under the auspices of the Department of Trade and the British Computer Society.

The conference theme will be "Telecommunications—the Trade Routes of the Future" and will highlight the importance of information technology and telecommunications both as a "lubricant" of trade

channels and as a valuable product in itself.

As Sir Donald Maitland says: "It's easy to be sceptical about the nature and purpose of these 'Years' which are proclaimed from time to time by the UN. There is no doubt, however, that they do contribute to increasing understanding and awareness of problems."

"World Communications Year is an occasion for looking at the world from a different viewpoint. It also offers a large number of British companies important opportunities abroad."

Michael Wiltshire



Sir Donald Maitland: "a timely and important initiative"

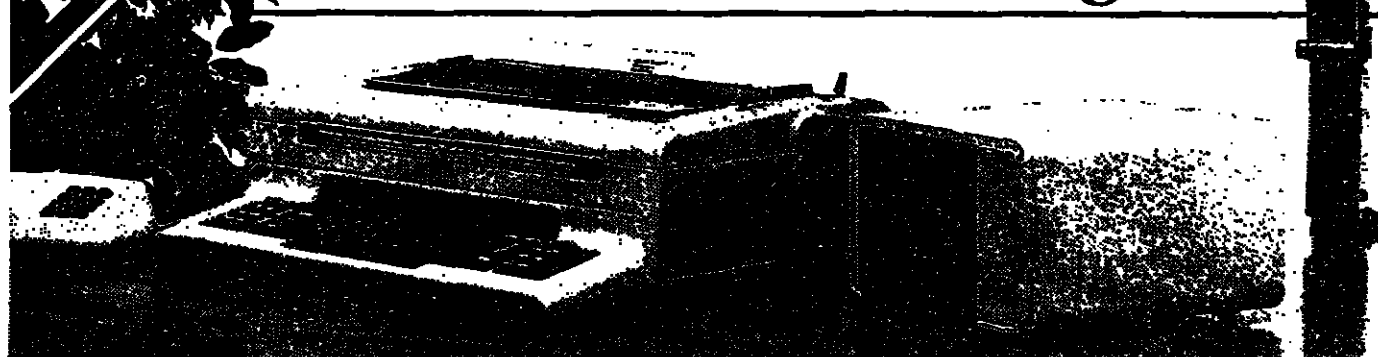
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Rex Winsbury discusses what progress has been made towards a wired society

## Interactive services await breakthrough to mass appeal

TELESHOPPING, tele-banking, tele-conferencing, videophones and on-line distribution of information are all part of the yet-to-be-realised dream of a wired society. But if the achievements are yet small, they are none the less significant. The rapid spread of home and personal computers over the past two years has, for the first time, meant that many offices and households have the type of terminal that makes these visions practical. Experiments in Germany, with the Verbraucherbank in Frankfurt, at Biarritz, in the UK, with the Homelink home banking scheme, in the U.S., with videotex systems like Viewtron; and the concerted trend to building new high-capacity cable systems across Europe, make it likely that substantial changes are now in train in the way money and information are handled.

Homelink, operated by the Nottingham Building Society and the Bank of Scotland, is the first substantial thrust into home (and office) tele-banking in the UK. It had always been forecast that the first move would not be made by a major clearing bank, and so it proved. After selective and regional advertising during the summer, Homelink has now moved to full-scale national promotion. It operates across the Prestel videodata network.

### Homelink

Interestingly, it has progressively reduced the requirements for participating in the Homelink scheme, from a £10,000 building society deposit in the early trial phase to £1,000. You can transfer money between the building society and the bank, order bills to be paid, ask for loans, obtain credit cards and perform other routine banking functions.

You either have a special Home Deck adaptor for your TV set, or you can access Homelink through your micro-computer terminal. Member of Micronet 800, the other interactive development on Prestel, this time mainly for the distribution of games to home micros by tele-software. Since its launch earlier this year, Micronet has gained over 3,000 subscribers, although progress in the market has been somewhat delayed by problems of data corruption over the telephone lines and acoustic couplers so far used. Plug-in modems and ROM software are now on offer to BBC and Sinclair owners. Prestel has had a hard

struggle to reach its present total of about 30,000 terminals in use, although that makes it by far the largest videodata system in use anywhere in the world. It has sought, but not found, a mass market. As the main distinctive characteristic of Prestel and videodata is its interactivity, this has brought a general reaction against the idea of universal telephone-based systems.

### Prestel

Prestel itself has taken the route of special-purpose applications, such as travel industry, Micronet and Homelink. Private videodata systems have to an extent taken over some of these same dedicated applications. BL and Ford for stock control in the motor industry; Rumblelows in the electrical retail trade, using Bishopsgate terminals; Thomas Cook in the travel trade; Baric in the pharmaceutical business — are all examples of successful applications of the videodata idea to specific purposes.

There is, indeed, a view now gaining ground that videodata as a separate style of distributed computing will disappear, merging back into on-line communications and micro-computing, but taking with it its lessons of simplicity of screen display, ease of use, and common standards of communication and screen layout. An example of this is the GEC Font system now in use in the Chemical Bank foreign exchange dealing room in the City of London, which is quasi-videodata in that it combines the menu method of data selection and the page method of data display with standard video terminals in monochrome, and depends on its calculating power rather than a large database for its performance.

GEC, supplier of the basic hardware and software on which Prestel runs and operator of a private videodata bureau used by British Rail and the Export Credit Guarantee Department, among others, is also marketing a range of private videodata systems, in the range of 255,000-plus terminals to £500,000.

The pioneer of home banking in Europe was undoubtedly the Verbraucherbank of Hamburg, a small credit bank that began with a highly automated banking system and extended it to videodata terminals, so that clients could see their bank statements, have bills paid, and order foreign currencies through the terminal, using once-only transaction numbers

added to their personal PIN numbers to ensure security from fraud.

How far this experiment extends to the major German banks will in part depend on the spread of the German videodata system, Bildschirmtext, which was formally launched as a public service in September at the Berlin Radio and TV Fair, but whose real marketing to the German public has been delayed until next year by problems with the software of the IBM system chosen for the purpose. Meanwhile, GEC, supplier of the German trial system, has done good business supplying stop-gap help to the German Bundespost.

However, in terms of ambition, backed by public money, it is the French experiments at Biarritz that will attract most attention. Pioneered at only 1,500 users (yet to be signed up) and using advanced fibre-optic cabling (now installed), its aim is to test both conventional uses of cable for distribution of multiple TV channels — typically the French are arguing about whether they all have to be French-language channels, or whether "foreigners" are allowed — and for state-of-the-art interactive uses such as picture telephones, interactive videodata, database access and reservation facilities, and (perhaps most interesting of all) on-demand access to video material, whether feature films or (say) documentaries about the city's attractions. This latter may use laser-disc players at the cable head and to distribute the moving pictures, real time, to the requesting subscriber.

### French PTT

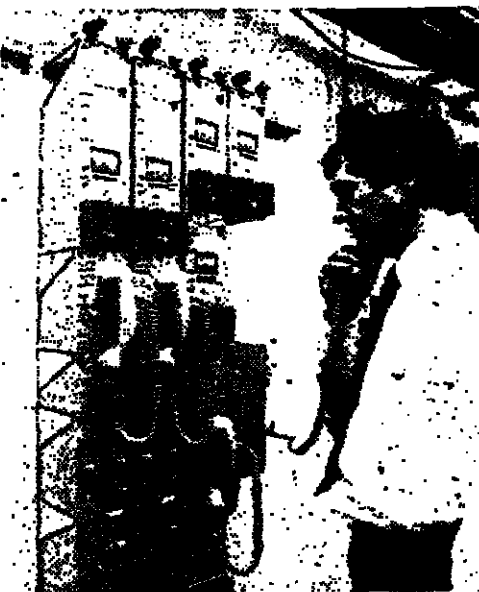
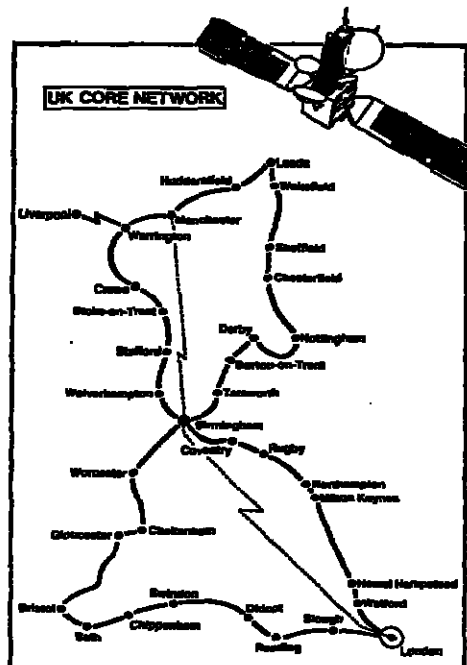
Whether all this works, and whether the huge cost to the French PTT (about £3,000 per home connected) is worth it, remains to be seen. But as a testbed for France's generally ambitious plans to cable the entire country with fibre optics as an industrial objective, it may justify itself in other than purely local commercial terms. Similarly, some of the UK private cable operators, such as Rediffusion and Thorn-EMI, are planning state-of-the-art cable installations whose objective is not narrowly commercial, but to act rather as motor racing does for the big car manufacturers, both as PR and to advance the frontiers of technology.

It is the role of cable in the future of interactive services that raises the most interesting questions. Cable systems can offer full field teletext which

gives a close approximation to interactivity and with the normal return path on the cable can be genuinely interactive. They can, if wanted, offer interactive services at marginal rates, assuming that the main revenues of the cable system are derived from entertainment services. They can offer subscription rates as opposed to the time-based charges that are characteristic of telephone-based videodata.

Whether they will do all these things remains to be seen. But U.S. experience tends to suggest that once cable has been built, there is an incentive to provide as many add-on services as possible, to generate maximum marginal revenues.

In the UK, British Telecom is offering to negotiate terms for supplying Prestel across cable systems, and is also offering Prestel-derived interactive services to cable operators. It is true therefore that no one, anywhere, has yet managed to demonstrate that there is a mass market for commercially-based inter-active services. But the development of cable, plus the penetration of personal computing, make it foolhardy to suppose that the idea of generally available interactive services, bravely pioneered by Prestel five years ago, may not yet come to fruition, albeit in different guises.



Britain's Mercury system: distribution node equipment (above) for Mercury links also provides facilities for direct voice traffic between sites

Robert Raggett analyses the formidable problems of switching to ISDN

## Race against time for super network

THE WORLD'S telecommunications networks have developed over the last century, primarily to provide a means of analogue voice communications in which varying frequencies, corresponding directly to the sound waves generated by speech, are carried through a complex network of wires, cables, radio links and electro-mechanical switches. Currently more than 550m telephones are connected to this world-wide network, and most of them can be directly connected one with another.

Over the past decade, new electronics have provided the technical and economic means to begin to replace this ageing analogue network with new electronic digital systems. Digital transmission and switching systems, in which any form of information — voice, data or images — can be represented and passed through the network in the form of groups of coded digital pulses, offer many advantages over analogue systems in terms of technical performance and cost savings. Beyond these, because digital codes are the language of computers, the new digital networks will enable administrations to offer a whole range of new computer-based subscriber services such as short form dialling, call forwarding and even synthesized spoken guidance and assistance to the caller.

These same technological advances which are enabling administrations to modernise their networks and offer new telephony services are also

being exploited in the creation of what has become known as the new information technology. High speed data transmission between a wide range of terminals, facsimile, videodata, terminal access to data bases, and high speed telex (teletext) and other electronic mail services are among some of the new information services already being demanded.

While new dedicated communications networks are being created to satisfy some of the demand for these services, in the long term it is clearly desirable to exploit the inherent capabilities and widely installed base of the future digital telephone network to create a single integrated services digital network (ISDN).

The ultimate goal is to provide subscriber-to-subscriber digital connectivity (both fixed and mobile) to support a wide range of voice and non-voice services. This "super network" will not only enable a mobile telephone subscriber in a car, in, say, London to communicate by voice, data or facsimile to any other fixed or mobile subscriber anywhere in the world, it will provide a whole range of interactive banking and retail services, access to a wide range of specialist and general information data bases, provide residential security alarm services and, perhaps ultimately, deliver the Financial Times to subscribers via a terminal and printer.

Importantly, there will also be gateway connections to and

from the ISDN to other private data and information networks. In this way, for example, customers so authorised will have access to banking networks to enable them to conduct a range of transactions, while executives working at home will have full access to their company's private information networks via the ISDN.

The ISDN cannot, of course, be switched on overnight. Its development will evolve over the next decade as more and more of the world-wide telephone network is converted to digital operation. A crucial challenge to planners today is to develop facilities and services that meet the customer's current needs, yet can evolve gracefully to meet future ISDN requirements.

### Data needs

Telecommunications administrations and operating companies are already installing digital switching and transmission facilities and developing network access, switching, signalling and transmission systems that will meet current data needs as well as the future expected international ISDN standards. From the user viewpoint the aim is to have a limited number of standard multipurpose interfaces which can be used to connect a wide range of approved user terminals, private branch exchange data bases and local area networks to the public ISDN network.

Several administrations have introduced special data services which are clearly forerunners to the ISDN capability, while separate trial systems are being established in a number of countries to gain both technical experience and customer response to tomorrow's telecommunications services.

In the UK the introduction of System X digital telephone exchanges and high capacity digital fibre optic, coaxial cable and radio transmission systems is providing the basis for the evolution to ISDN. System X features which provide digital access for customers, with an advanced signalling system and appropriate call handling procedures for voice and non-voice calls, have already been introduced by British Telecom in London for business users. As the installation of System X exchanges progresses, throughout the UK the facilities of this initial overlay network will be extended to other business centres. Services British Telecom proposes to offer its ISDN subscribers include circuit switched data from 2.4 to 64 kbits/s, facsimile at 64kbits/s, teletext (high speed telex service), videodata, private digital circuits, access to the packet switching service, slow-scan, and digital telephony.

But this is just the beginning. International standardisation of signalling protocols is important to avoid, or at least minimise, the conversion mess at international gateways between national networks. It is far from clear at this stage to what extent international standards will be agreed and implemented. It is also far from clear if and how the emerging wideband cable networks being planned initially for cable TV will impinge on the traditional markets of the telecommunications administrations if they begin to offer voice and data services. There are also many technical problems to be overcome, not so much at the basic research level but in developing equipment and systems at a price that is both attractive to the user and offers sufficient return to the administrations. Price is crucial, for to succeed ISDN-related services have to be attractive and to be used by the mass residential subscribers. That market still has to be convinced that there are alternatives to the postman and the newspaper delivery boy.

The public switched telephone network has been allowed to evolve over more than 100 years in a period of relatively slow technical change, and now provides a relatively efficient world-wide service. The integrated services digital network, in a period of rapid technical change and the convergence of telecommunications and computer technologies, has, at the very least, to emulate the success of the telephone network, and to do so in about one tenth of the time. It's a tall order and maybe just a dream.

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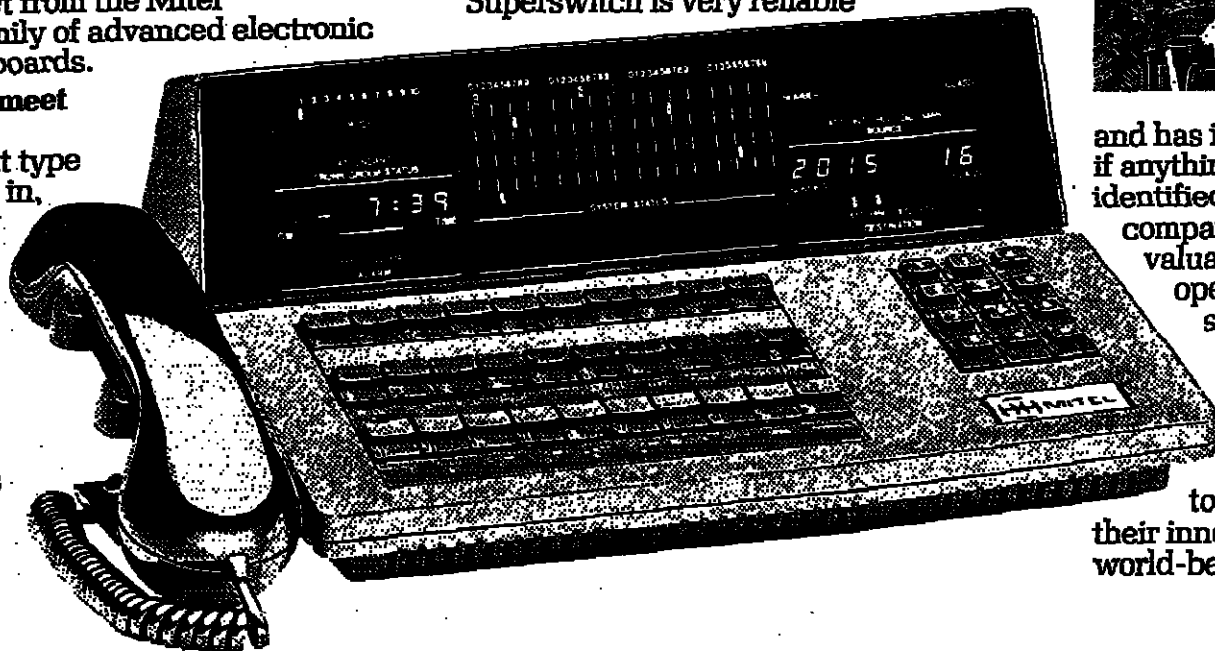
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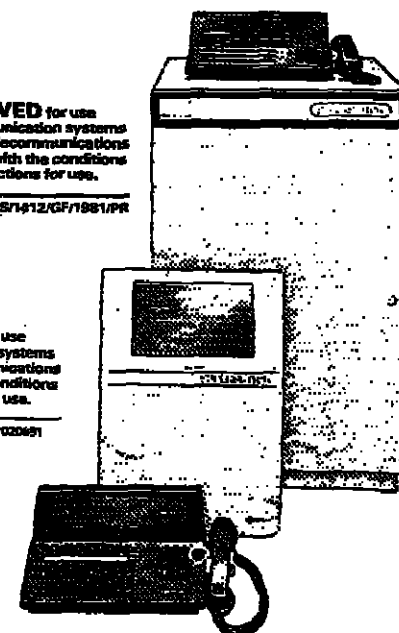
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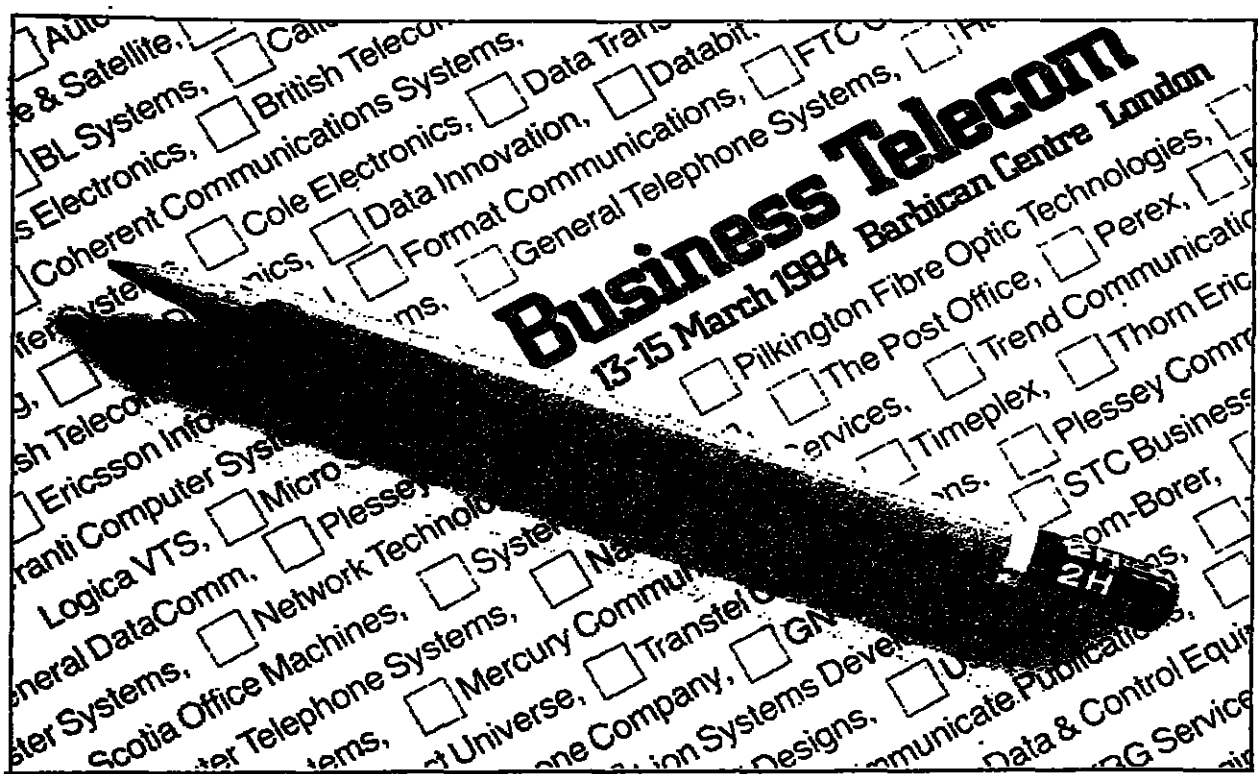


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## WORLD TELECOMMUNICATIONS XXII

Spy satellites are the most advanced arm of defence communications. Michael Donne reports on developments in Britain and the U.S.

## Britain's Skynet IV launch via the Space Shuttle . . .

SOME TIME IN 1985, the first of a new generation of British military defence communications satellites, Skynet IV, is due to be launched by the U.S. Space Shuttle.

Built by British Aerospace in conjunction with Marconi Space and Defence Systems, the present two satellites envisaged represent the latest development in UK defence communications techniques, embodying the most modern and secret equipment that will ensure a substantial improvement in communications between British ships and land and air units world-wide and their home base in the UK.

Britain has had military satellites before, but the Skynet IV, of which virtually no details have been released—is likely to be sufficiently advanced to enable Britain to keep abreast of this branch of military technology for years to come.

So advanced will these craft be that, according to a recent submission from the Pentagon to the U.S. Congress, the U.S. Air Force and the UK Ministry of Defence are drafting an agreement which would allow the U.S. to use part of the Skynet IV system in peacetime and in war. Both Skynet IV satellites will be launched by the Space Shuttle.

### Entire spectrum

The new satellites are only one indication of the revolution in communications that is sweeping through the defence establishment, in response to the increasing pace of technological development across the entire spectrum of military activities.

With the increasing deployment of guided missiles, both conventional and nuclear, the pace of modern warfare itself has increased dramatically, requiring an equally substantial improvement in direct communications to enable commanders in the field, as well as airborne forces and ships at sea, to keep abreast of, or even ahead of, battle developments.

In its broadest definition, defence communications covers the entire spectrum of links between the fighting forces and their home bases, and between individual air, land, sea and air-craft commanders and their immediate counterparts. The need is for very high-speed, continuous and coherent links that are sufficiently robust to withstand the rigours of modern warfare, and capable of operation under all conditions of climate, by day and night, as

well as being resistant to enemy efforts to disrupt by jamming or other forms of direct attack.

These demands have spawned already a major new generation of radio communications systems.

Examples include the Parmigan trunk communications system now entering service with the British Army of the Rhine, which provides comprehensive and resilient area communications, with automatic rerouting in the event of enemy damage, and the Marconi Communications Trifid new-generation radio relay system now in production for the British Army.

The requirement of the defence establishment cover the entire radio frequency spectrum, from VLF (Very Low Frequency) to microwaves, while the equipment needs range from small hand-portable transmitters through to complete radio broadcast stations and networks, both static and mobile, as well as major satellite earth and ship terminal complexes.

Many of these developments represent "spin-off" technology, in which the demands of the military establishment result in the research and eventual production of equipment that can eventually have civilian uses. But the traffic is not all one way. Much of the knowledge gained in the past in the development of civilian communications satellites, for example, is being applied to the latest Skynet IVs, and often research into new communications techniques in both the civil and military fields.

All this costs a great deal of money. While the electronics companies spend much of their own cash on research and development programmes, they are also substantially supported by the Defence Programme. A recent Defence White Paper revealed that the Ministry of Defence spent over £100m on communications equipment in 1982-83, or 20 per cent of the total output of the electronics industry, although much of that output is in areas other than direct communications equipment.

This year's Defence White Paper showed that combined total spending in 1983-84 on defence electronics, data processing equipment and other electrical engineering would amount to over £1.4bn, or close to one-fifth of the procurement budget.

While much of this cash will be spent on a wide range of electronic items other than direct communications equipment—such as guidance systems for missiles of all kinds, radars for target acquisition and other purposes, navigational equipment, gunnery control systems, and electronic counter-measures—a substantial sum will be spent on direct communications equipment.

### Expenditure

Recent defence spending programmes. The White Paper showed that such electronics companies as Ferranti, GEC, Electric and Plessey Group all had over £100m from the defence programme in 1981-82; Philips Electronic and Associated Industries, Racal Electronics, Sperry and Thomson each had between £50m and £100m; Cable and Wireless between £25m and £50m; and Cossor Electronics and Standard Telephones and Cables between £10m and £25m. While it is impossible to quantify precisely the amounts spent on communications equipment, it was nevertheless substantially within the overall figures.

This spending can be expected to rise in the years ahead. Not only will the overall volume of defence communications equipment required increase, but the increasing technological complexities of modern warfare will also generate new techniques—especially for example, the ever-widening field of electronic counter-measures (ECM) and electronic counter-counter measures (ECCM).

The need constantly to improve the reliability and integrity of what is called "Command, Communications and Control" to keep pace with what the enemy is doing is already one of the most vital aspects of modern warfare (as experienced in the Falklands conflict showed clearly), and is also just as significant in peace-time.

The research drive is thus likely to be unrelenting, and it can be expected that the "spin-off" to civilian use will also improve significantly once the needs of the military establishment have been met.

## . . . marks growing scale of Western surveillance

THE U.S. Space Shuttle (or Manned Reusable Space Transport System, to give it the full title), is likely to effect a dramatic revolution in defence communications.

For this purpose, "communications" are being interpreted in their widest possible sense—that is, not just the provision of a communications satellite launching capability for Skynet IV and any future U.S. defence communications satellites, but also for the regular surveillance from space of what goes on below on Earth, with the resultant information being transmitted from the Shuttle, or from the satellites it may launch, directly back to Earth for the information of, and action by, the military establishment.

This kind of communications capability is vital, for satellites are now capable of offensive military roles as well as passive ones, for example, carrying offensive weapons such as nuclear missiles.

Improvements for the military leaders in the West to know virtually minute by minute what their potential adversaries may be doing.

As a result, over recent years, there has been a proliferation of "spy in the sky" types of satellite, undertaking 24-hour-a-day surveillance not only of what happens on the ground but also of what is being done by Soviet satellites themselves.

A by-product of this situation has been a dramatic improvement in intra-space communications techniques, with both photographic and other data being capable of transmission electronically from the satellites (or the Space Shuttle) to ground stations for relay to the military commanders for interpretation and subsequent action.

It is likely to be only a short step in time before this type of communications technique is translated from the strategic to the tactical sphere, with commanders in the field being able to see in an instant on TV screens in battlefield command posts a complete picture of enemy ground dispositions as detected by satellites and re-

layed from space to mobile ground stations close by.

Such information would also be simultaneously available to the higher echelons of command behind the battlefield, so that an instantaneous strategic picture would be kept continuously up-to-date, thereby making it easier for the more senior military commanders to adapt strategic postures accordingly.

### Potentialities

In this new element in the overall defence communications field the Space Shuttle will play a vital role. As a manned system, it will have a much greater versatility than conventional unmanned satellites.

The U.S. Defense Department has not been slow to recognise the potentialities of the Shuttle, and out of the hundred or more launches planned between now and the mid to late 1980s, around one-fifth are allocated to the Department of Defense for a wide variety of purposes.

Although defence communications satellite launches figure largely in these roles, it is believed that more direct communications roles are also planned for some Shuttle flights, to test the efficiency of new, and as yet secret, surveillance and transmission techniques.

### Applications

There are also some further, even wider, applications of defence communications techniques that are envisaged for the Space Shuttle and for the communications satellites it may launch. It has been argued by the U.S. Air Force for some time that satellite surveillance of air activity over a major battlefield area—even on a regional basis covering a vast area, such as the Central Front of Nato on the Continent—might be even more effective than that carried out at present by such systems as the Airborne Warning and Control (AWACS) aircraft or the Air Defence Ground Environment (ADGE) radar chains that already exist, giving early indications of enemy aircraft or missile attacks.



A satellite leaves the cargo hold of the Space Shuttle: a dramatic impact on defence communications for the Western world



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## High-speed approach to public radio-telephony

THERE CAN HARDLY have been an area of electronic technology that has undergone such a trauma of change in recent times as public radio-telephony.

In the UK, for example, in a little more than a year there has been a Government announcement that two competitive cellular radio services will be sanctioned, followed by an intense period of media and industry discussion, the formation of several consortia, and finally the granting of licences to two of them with a proposed start-up date of early 1985.

Both consortia have also chosen network equipment suppliers: Motorola is to provide an initial £20m of switches and transmitters to the British Telecom-Securicor grouping while Racal Millicom has announced that it expects to buy £100m of network electronics from Thorn-Ericsson. All of the mobile radio industry is expected to offer mobile units by 1985.

This welcome high-speed approach in fact has been preceded by an incubation period extending back to the late 1950s when Bell Labs came up with the "cellular" idea.

### Cost-effective

However, only recent advances in fast computerised exchanges, together with radio-telephones that can be rapidly re-tuned by computer, have allowed such systems to become practical and cost-effective.

There has already been considerable progress in other countries. Scandinavia has had an operational service (NMT) since 1981; there are others in Japan; the German C-900 system will go into public service next year, and there are two major trials in the U.S. that are about to be converted to commercial operation.

Many systems have been on offer from manufacturers. So there is the original AT & T concept, AMPS (advanced mobile phone service) and a variant from Motorola called Dynatac which will be used in the UK by BT/Securicor. Philips/Tekade have offered MATS-E, which claims higher

capacity but which is still under development. Siemens has the C-900 and NEC in Japan is actively seeking international business. Ericsson, which developed the NMT system, will supply Racal-Millicom.

Cellular radio will completely change the radiotelephone scene. The reason is simply that with conventional "one transmitter per city" systems, the operating authorities (historically, in Europe, the PTTs) have rapidly run out of radio channels. This is because they can be re-used geographically to a limited extent only and are small in number because of spectrum allocation policy.

As a result demand always exceeds supply and the price of these services remains high.

To cover a large city satisfactorily the transmitter must be high powered to reach the edges of, say, a 25-mile diameter area. Then, however, it is likely to interfere with other cities up to 100 miles away, making wide reuse of the channels difficult. With cellular techniques, the total service area is divided up into several "cells," each with its own low power transmitter and highly sensitive receiver.

Each cell has sufficient channels allocated to give a satisfactory grade of service (minimum waiting) but the key point is that the low transmitter power allows these channels to be re-used in a second cell perhaps only a few miles away. The number of subscribers that can be accommodated can be easily increased 20-fold.

Each of the cell stations is land-line, connected to a switching centre which sets up calls to and from the public telephone network and also hands vehicles over from one cell to the next as they move about.

Typically, when the user lifts his handset and keys a number, the vehicle or hand-portable unit broadcasts a request for a voice channel using a special signalling frequency. The cell base stations monitor the signalling channels, enabling the central computer to know where the vehicle is (by comparative measurements of signal strength). The central computer then knows which set of frequencies to apply and a

channel can be allocated to the caller.

The process takes only a fraction of a second. When moving from one cell to the next the channel frequency changeover may take place in mid-conversation but is generally not noticed.

The AMPS system, on which Motorola's Dynatac equipment is based, uses sectorised directional transmitting aerials. These enable it to address a particular mobile while sending less signal in other directions, increasing the system capacity by reducing interference with other cells and permitting even more frequency re-use.

In the U.S., where trials are two or three years old, engineers are already considering some of the problems that will arise if demand, as expected, rises dramatically when the systems "go commercial."

### Immediate go-ahead

This is about to happen in the AT&T Chicago trial and American Radio Telephone Service, which runs the Washington-Baltimore system, has applied for immediate go-ahead.

At a recent London conference put on by Oger and sponsored by the Mobile Radio Users' Association, Andrew Lamothie, technical director of ARTS, said it was likely that even the latest electronic switching units will be over-taxed by the 60,000 or so subscribers expected by 1987.

At peak times of the day the system might have to carry out one switching transaction every microsecond (millionth of a second). So it will probably be necessary to use distributed switching centres able to "talk to each other" in order to avoid congestion.

In the UK, apart from the decision that both will use AMPS-based systems, only limited operational data is available about the two services—a criticism made by Walter Stevenson, chairman of the Mobile Radio Users' Association.

He believes that companies planning to spend considerable sums equipping their executives urgently need hard data on mobile equipment prices, maintenance charges, call fees

and such things as service areas and signal strengths.

However, John Garrett, technical director of the BT/Securicor venture, was at the conference in London and was able to give some idea of the standards now being developed at the Department of Trade and Industry.

An important area needing development beyond that applied in the U.S. to AMPS is "roaming." It should be possible for any UK user to roam into areas served by the competing system. Furthermore, a British motorist, for example, should eventually be able to use his equipment in any other European country. BT/Securicor and Racal Millicom have started talks on the subject.

Apart from inter-system roaming, other interfaces are under active consideration. One is the "air interface" which covers both signalling across the radio path and the necessary performance parameters of the mobile units, allowing radios from different makers to give acceptable performance.

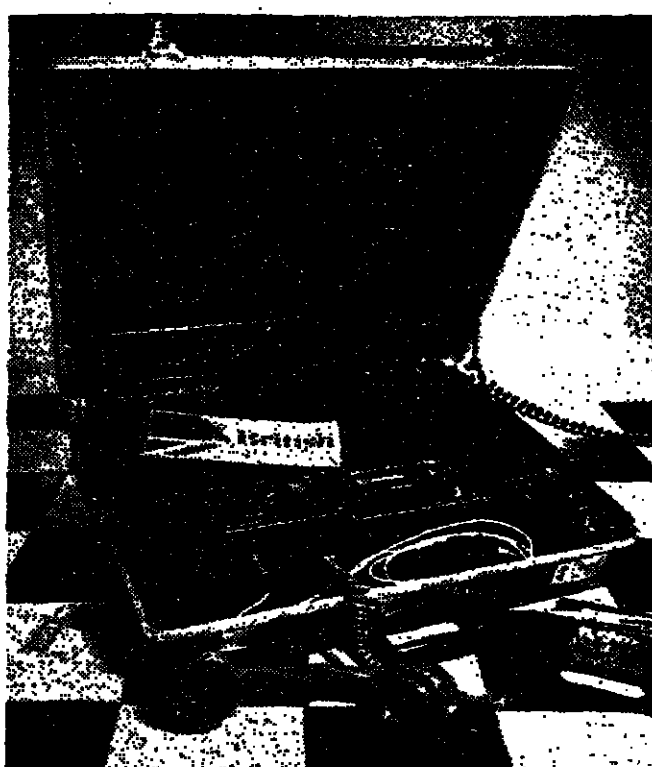
Another is the connection between radio systems and the public switched network; there will be a range of options which can be used in negotiations between BT and the two operators. It will also be necessary to specify speech levels at the various interfaces to assure acceptably noise-free conversations.

Type approval testing is to be performed by an agency yet to be appointed and testing is expected to start in mid 1984.

Garrett thinks people might be getting the wrong impression about the availability of the new cellular service in 1985. It will not immediately cover the whole country. "The enthusiasm to achieve this" he points out, "is necessarily tempered by the availability of manpower and money." Some 2,000 cells would be needed, rising to perhaps 10,000 if extensive coverage of the country is required.

So the services will start in London and will extend to Birmingham, Manchester and to the motorways connecting them, probably during 1985.

Geoffrey Charlish



Marconi's Marccryp case offers encoded telephone security worldwide—in a briefcase. It combines the speed of the telephone with the security of advanced electronic cryptography

Geoffrey Charlish discusses advances in 'teleconferencing' services

## Face-to-face links come into focus

THE IDEA that people should be able to see, as well as hear, each other over a two-way communication link is almost as old as television itself. One of the first practical manifestations was the experimental Bell Picturephone in the 1960s in which a tiny screen was associated with a telephone instrument and a miniature camera.

While the concept is still a favourite with science fiction TV writers, in real life there are two barriers. One is that it is far from certain that in an ordinary phone conversation people actually want to see each other.

The other is that the cost will probably always rule video out, even with the newer "bandwidth compression" systems that are now emerging. Public telephones with video, such as the Bell system, were just 100

costly and might well remain so.

However, for groups of highly paid people whose time is at a premium and who are accustomed to spend a good deal of their company's money travelling about the world, it might be a different matter.

The world's travel agents estimate that the annual business travel and entertainment market is worth \$600bn. As one communications company executive put it: "Just 1 or 2 per cent would suit us nicely."

### Linked systems

On offer will be "teleconferencing" systems in which geographically separated groups of people using linked TV systems can "meet electronically" without travelling. In fact, such services have

been available for some years but have not been as successful as was hoped, due mainly to cost and inconvenience—often the participants had to travel to a regional conference centre.

BT has had a teleconferencing service, Contravision, since 1973, and engineering trials to France, Italy, West Germany and the Netherlands, where there are similar services, have been going on for some months using bandwidth compression techniques.

Trial services to Canada will be offered and service to the U.S. will be possible with either Satellite Business Systems (SBS) or AT & T, the latter using spare capacity on transatlantic cable TATS.

In February, Intelnet was launched—the first privately operated videoconferencing service run jointly by Intercontinental Hotels and Comsat General.

The resurgence of interest is due to developments in the key technical areas of bandwidth compression, public digital transmission at high information rates and in the "chip" technology that allows these advances to be realised at reasonable cost.

Bandwidth compression is a technique in which, by ignoring some of the information in each television picture frame, less needs to be sent per second.

For example, if the picture is static, there is no change of data between one frame and the next. So once that frame has been transmitted, it could be stored at the other end and not sent a second or subsequent times—so reducing the data rate.

Until recently, these techniques tended to degrade the picture rather badly; if there was to be a worthwhile bandwidth reduction, not much motion could be tolerated in the picture.

These methods depend on being able to store each frame in an immediately accessible way for processing. So each picture element (pixel) in each of the 625 lines is given a digital code and stored in a solid-state memory.

It is then possible for the electronics to "consider" the picture content in various ways. For example, it can compare each pixel with its counterpart in previous frames (interframe processing) to see if it has changed (sending no data if it has not).

Alternatively, it can divide up each frame as it occurs into small areas, sending data at a lower rate for those that have small variances of picture content. For example, if one of the areas is completely white or black, very little data need be sent to describe it. If it contains, say, part of the image of a face, more data is needed (intraframe processing).

As the amount of motion in the picture increases, interframe processing can give rise to jerky, blurring effects in the received picture. Intraframe has no such problem (since there is no frame-to-frame comparison) but can give rise to less crisp, low-motion images.

In July, a Californian company called Compression Laboratories, in an algorithm of its own, announced that it had combined the two techniques so that, as movement in the picture increased, there was no serious loss of quality. It expects most of its business to come from the U.S. but the announcement triggered off a response from GEC-Jerrold in the UK, which revealed it had developed a similar "codec" (coding/decoding system) and was supplying 80 to British Telecom for trials.

The system was successfully demonstrated in a link between a BT studio and Phoenix, Arizona in September. A similar link will be set up soon between London and Los Angeles for the Third Annual Teleconferencing Users' Association, and another between Geneva and London while Telecom 63 is in progress.

### Trials

The GEC-Jerrold devices will be installed in a number of locations in a nationwide and European trial. For the time being, these will make use of old hoc cable, optical fibre, or microwave connections from customers' premises. Ultimately it is planned to deploy codecs directly at the users' office or factory—when volume production drops their price and when suitable capacity digital services are available.

BT expects to have about 50 private terminals and the existing Contravision studios on the network by the middle of 1984. Sandra Neilson, responsible for marketing of the international service at BT, believes there is now substantial interest in teleconferencing services in Europe. She sees growing disquiet about the amount of cash being spent by company executives moving about the globe.

As well as designing the transmission electronics, Compression Labs and GEC-Jerrold have both developed compact studio equipment consisting of dual monitor and camera on a trolley that can be wheeled into any reasonably large room.

Apart from face-to-face conferences, graphics facilities are provided in which the slightly slower transmission of one TV frame (in a second or two) allows high definition drawings and diagrams to be sent while the conference continues.

The cost of such new services within the UK is yet to be revealed, but the half-way price to the U.S. is understood to be about £500 an hour, and to anywhere in Europe, £225.

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## WORLD TELECOMMUNICATIONS XXIV

Improved quality combined with falling costs have greatly improved potential, says Jason Crisp

## Optical fibres make a commercial breakthrough

OVER 100 years after Alexander Graham Bell examined the possibilities of transmitting speech using light the era of optical communications has truly begun.

Telecommunications authorities around the world are now beginning to place large commercial orders for optical fibre systems for use in their trunk networks. Submarine cable systems are now on the verge of changing from co-axial to optical fibre.

Optical fibres have been one of the most dramatic recent innovations in telecommunications, second only to the digital revolution, of which they are part. Optical fibres are hair-thin strands of exceptionally pure glass which can carry many thousands of telephone conversations in the form of very fast streams of light pulses. The commercial potential for optical fibre was discovered by two British scientists in 1966 at the Standard Telecommunications Laboratories in England. Since then there has been a worldwide race to make optical fibre a commercial proposition. The quality and technology of the glass fibre itself has improved greatly and its cost is falling. At the same time there have been major steps forward in the opto-electronic technology which produces the pulses of light.

### Conventional

The result has been a major reduction in costs which is making optical fibre cables competitive with conventional copper co-axial. Optical fibre has a number of advantages:

- It can carry very large amounts of information and data. A typical pair of optical fibres being installed at present can carry the equivalent of 2,000 telephone calls.
- It is very thin and lightweight, which means cables are smaller and more easily and cheaply installed. Also more cables can be fitted in the crowded ducts in cities.
- Optical fibre cables need fewer repeaters than co-axial cable to boost the signals. With the highest quality fibre repeaters can be 30 km apart using current technology. In a compact country like the UK that means practically all repeaters can be housed in warm dry exchanges.
- Immunity to electro-magnetic and radio interference — particularly useful for telecommunications cables in city areas where there can be problems of interference from, for instance, electricity supply installations.
- Greater security as it is virtually impossible to "tap" an optical fibre.
- The bandwidth is greater which means more information can be carried.

At present the world market for optical fibre systems is comparatively small and the great majority of applications is in telecommunications. But as the costs of optical fibre and the associated electronics fall so the potential market dramatically increases.

Already optical fibres are much more economic than co-axial cable in trunk tele-

communications. Now telephone authorities are examining their use in the junction network which links local exchanges and in many cases optical fibre is becoming economic. Eventually optical fibre will be cheap enough to connect up individual homes in the local network. Already many countries are looking at providing a wide range of services to the home via optical fibre cable. These services include cable television and audio, teleshopping and banking, video games, access to data bases and videophones.

### Microwave

British Telecom is believed to be the first telephone authority (PTT) in the world to commit itself in 1981 to using only optical fibre in the trunk network from 1984 on. From April 1 next year all new cable in the UK trunk network will use optical fibre. By 1990 half the BT trunk network will be optical fibre, about 25 per cent will be using co-axial cable previously installed and the remaining 25 per cent will be microwave.

Also in the UK, Mercury, the private sector network competitor to BT, is shortly to build its trunk network using optical fibre. Mercury, owned by Cable and Wireless, BP and Barclays Merchant Bank, is to lay optical fibres alongside British Rail tracks in a figure-of-eight loop linking London, Bristol, Birmingham, Manchester and Leeds.

The world's first commercial monomode optical fibre system was commissioned in the U.S. by Continental Telephone of New York last month. (The first UK commercial monomode link was installed in Milton Keynes in due to be commissioned this year.)

In the U.S. a major demand for optical fibre is developing. American Telephone and Telegraph (AT&T) is building a major optical link along the East Coast between Boston, New York and Washington, the latter part of which was opened earlier this year. AT&T has also launched 1,200 mile fibre-optic programme to link 10 U.S. cities at a cost of over \$100m. The programme will link Philadelphia and Pittsburgh, Pittsburgh and Cleveland, Dallas and Houston, San Antonio and Seguin, Atlanta and Charlotte and Greensboro in North Carolina.

AT&T, the leading long-distance carrier competing with AT&T, has ordered 62,000 miles of monomode optical fibre from Northern Telecom, the Canadian telecommunications supplier, worth between \$50m and \$100m. The fibre will be used in 4,250 miles of cable in MCI's East Coast telecommunications system. The cable will initially be used to increase capacity between New York and Washington and will be laid alongside Amtrak railway lines.

Northern Telecom is also a major supplier of optical fibre systems in Canada, including the 3,200 km Saskatchewan Broadband Network which will provide major communications facilities including the distri-

bution of cable television.

The leading suppliers of optical fibre for telecommunications in the U.S. market include Western Electric, ITT, Northern Telecom, Slocor, NEC, General Telephone and Electronics, Valtec, Raytheon, Fujitsu and L. M. Ericsson. Japan has announced plans for a massive introduction of optical fibre systems over the next decade. Nippon Telephone and Telegraph is to install a fibre-optic-based "Information Network System" (INS) which will connect the Japanese archipelago with telephone, data communications, facsimile and image transmission, costing many billions of dollars. NTT has begun an experimental INS scheme in two suburbs of Tokyo. Leading companies include Fujitsu, NEC, Hitachi, Oki and Sumitomo.

One of the best known fibre-optic projects in Europe is the French plan to "wire-up" Biarritz. The plan is to connect 5,000 homes. Households would be able to receive television and radio, send mail to each other by facsimile and have access to data banks with a viewdata system. France's first inter-city fibre-optic link covers just over 20 miles between Le Mans and La Fleche, which is being supplied by Compagnie General d'Electricite.

### Showpiece

West Germany has a number of fibre-optic schemes, of which the best-known is the BIGFON project providing television, telephone, data, graphics and other services to six cities: Berlin, Dusseldorf, Hamburg, Hanover, Nuremberg and Stuttgart. The main fibre-optic companies in West Germany include Siemens, Standard Elektrik Lorenz (part of ITT) and AEG Telefunken.

The UK has not chosen to establish similar showpiece communications systems such as Biarritz, BIGFON or the Japanese INS. British Telecom, however, does have a very small project in Milton Keynes which links a handful of homes with television, viewdata and so on.

The technological lead in optical fibre technology is strongly contested between Japan, U.S., Canada and the UK, closely followed by West Germany and France. Although laboratories in these countries often compete to transmit signals along the longest stretch of fibre without using a repeater, the real lead is likely to be the result of demand.

Already the U.S., Canada and Japan, for different reasons, are indicating particularly heavy levels of demand. The demand is crucial because of the need to gain volume production which can dramatically reduce costs and increase international competitiveness.

Britain's strength in optical fibre technology is largely because of British Telecom's strong interest. BT's own research in the field, together with a strong purchasing programme, has helped British companies, including Standard Telephones and Cables, GEC, BICC and Plessey.

Earlier this year BICC and



Jan Harrison (above, left), a technician at British Telecom's research establishment, compares the size of the new lightweight optical fibre cable with the old-style co-axial variety. Below: technicians laying BT glass-fibre phone links



Corning opened a brand new factory in Deeside to produce optical fibres. BICC is a licensee of Corning of U.S., the world's leading producer of optical fibre. The joint-venture between BICC and Corning is called Optical Fibres. The new factory, which cost \$17.5m, is probably the most modern optical fibre factory operating in the world. The current capacity is about 60,000 km a year but is capable of being easily increased to 100,000 km. At present the great majority of output from Optical Fibres factory goes to British Telecom.

Plessey, one of Britain's leading telecommunications suppliers, works with BICC and supplies the opto-electronic devices in joint bids with BICC, GEC and STC both produce fibre and the opto-electronic equipment.

Standard Telephones and Cables' first interest in optical fibres is their use in undersea cable systems. STC has about 60 per cent of the available market for undersea cable systems and is currently build-

ing ANZCAN, the link between Australia and New Zealand and Canada. It is crucial for STC to establish its lead in optical fibre technology to keep its dominant share of the undersea cable market.

### Attractions

Economically, optical fibre is potentially very attractive in submarine cables because of the distance between repeaters. Submarine systems have a design life of 25 years and the repeaters are built to a very high and expensive specification to meet this requirement. With optical fibre cable the number of repeaters can be cut substantially; the problem is that the technology is not proven, in that it has not yet been in existence for 25 years.

The battle is now on for submarine systems using optical fibre. The major order is TAT-8, the next trans-Atlantic cable, which is due to come into service in 1988. The bidders are AT&T, STC and Submarine, a subsidiary of the French group

GEC. The tenders were submitted earlier this year and adjudication is imminent. As AT&T also owns half the cable it is a foregone conclusion it will also win the lion's share of the contract. But STC and Submarine are also expected to win significant orders.

STC is also bidding, and expected to win, the first international undersea cable link. This will join UK and Belgium, with links on to West Germany and the Netherlands. The contract, worth between £7m and £8m, will come into operation in 1985 and provide a capacity of the equivalent of 12,000 telephone lines.

There are over 100 companies worldwide which are competing for part of the fast-growing market for optical fibres. At the moment most applications are in telecommunications but others, particularly defence, are also developing quickly. Most observers believe there will be a shake-out in the industry, which makes the race for market share even more important.

Improving the communications capacity of spacecraft has become a top priority, reports Elaine Williams

## Trend towards ever-larger satellites

ABOVE THE EARTH, a number of tiny bee-like satellites circle the globe. Their job is to pass telephone conversations, both personal and business, computer digital codes over vast distances from one point on the earth to another.

Satellites are now an important part of the world's long-distance communications network vying with cables for the business and home telecommunications market. While cables may have a life of 30 years or more, satellites remain in their orbit for about seven years before either running out of power or being superseded by better craft. For the satellite builders the aim is to cram more circuitry on the spacecraft to handle great amounts of telecommunications traffic.

### Simple

In theory, satellite communications are very simple. Aim a radio beam at a tiny spinning craft some 23,000 km above the earth. At this height the satellite rotates at the same speed as the earth and therefore remains over the same point on the earth's surface. This means that 24-hour communications is possible between any two ground stations which can transmit to the satellite. Electronics on board the satellite detect the signal beamed from the ground, amplify it and retransmit it back to another point on the earth's surface. To give worldwide coverage only three satellites are needed.

Unfortunately there is a limit to the number of satellites which can occupy the geostationary orbit. The practical limit is about 180 spacecraft at this distance from the ground. With increasing pressure on long-distance communications and the growing demands from developing countries for telecommunications, technology has to be developed so that a single satellite can have a greater communications capacity.

Interest in the international organisation that operates communications satellite systems for 109 nations, is the largest user of the geostationary orbit. It has 15 craft circling the Earth above the Atlantic, Pacific and Indian Oceans.

Its next generation of communications craft, now under construction by Hughes in the U.S. and costing \$1.5bn, is Intelsat VI. Each of these craft will weigh 1.7 tonnes in space and will handle up to 35,000 two-way telephone conversations. For comparison, Intelsat's first satellite, Early Bird, launched in 1965, weighed a mere 39 kg and carried 240 calls.

Most of today's communications satellites operate in the 4 GHz band — to transmit

information to Earth while signals from the ground stations are at 6 GHz. As the trend is to cram even more channels on to each satellite so these frequencies are pushed ever upwards requiring more sophisticated technology to carry this out.

For example, RCA's next models in the K series of satellites to be launched in 1987 will be operating in the 11 to 14 GHz frequency bands. The trend in satellite communications is towards ever larger satellites in the geostationary orbit. British Aerospace is now well advanced with the development of L-Sat (with the L standing for Large). This spacecraft is being built under a European Space Agency contract and the first launch is planned for 1984.

L-Sat weighs 2.3 tonnes and will have solar panels measuring 36 metres from end to end. It will provide 200,000 simultaneous telephone calls beamed to 2.5 metre diameter ground aerials. The satellite will pioneer communications in the 20 to 30 GHz frequency range — the highest yet for any type of commercial satellite communications system.

Britain and Italy are the largest contributors to this project — each providing some 34 per cent of the total cost of L-Sat. Italy in particular has a chronic telecommunications problem and hopes to add 150,000 telephone circuits between 15 cities with the new satellites.

### Boundaries

Much interest has also been shown in so-called direct broadcast satellites. These also provide communications but of a much wider nature than those of Intelsat and L-Sat. In space communications technology has to be developed so that a single satellite can have a greater communications capacity.

In general, such satellites have been no respecter of national boundaries since a beam can transmit over an extremely wide area. There has been much discussion over the transmission of one country's television signals beyond its own borders where some countries have expressed objection to being bombarded by unwanted foreign signals.

So work has been under way to overcome this problem. Satellites which can provide a much higher power and special contoured antennae so that radio beams can be shaped to fit the national boundary of a country. These contoured antennae allow full coverage over a country but the signal strength falls off sharply outside its boundary.

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## WORLD TELECOMMUNICATIONS XXV

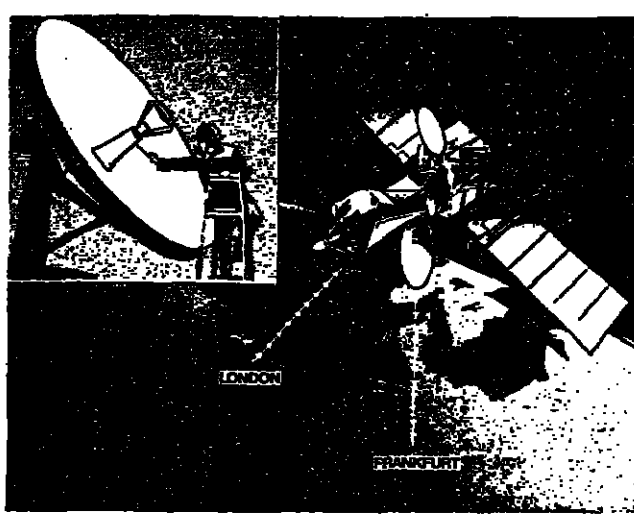
How the FT transmits full-page reproductions from London to Frankfurt



A full-page newspaper facsimile machine (left) in the London office of the Financial Times transmits high-quality reproductions of the London pages to Frankfurt for the paper's international edition.

The system uses a 48 KHz wide-band British Telecom circuit and has been in successful operation for nearly five years. During this period no pages have been lost through technical reasons.

Right: pages have also been transmitted to Frankfurt by satellite from London. This experiment was set up in association with British Telecom and West Germany's Bundespost to test the European orbital test satellite.



London's dockland is well-sited for expansion of telecom-related industries

## Switch of gear for dockland

LONDON'S DOCKLANDS, Europe's largest single area available for development, is adjacent to the world's most dense telecommunications market and thereby looks set to become one of the major centres of telecom-related industries in the UK.

An enthusiastic Development Corporation, plus advanced plans for two large-scale satellite earth station complexes, and a joint Anglo-U.S. cable franchise application, together with existing information-based industries such as film and television production and publishing, plus active interest from UK and U.S.-based telecoms service and manufacturing organisations, are combining to make Docklands the natural centre for telecom-related industries in London.

By the end of 1984, both BT and Mercury plan to have operational earth station complexes in the area. The BT facilities, to be located on the south side of the Royal Docks, will be used to provide leased television circuits, via the European Communications Satellite (ECS) system, and broadcast television services via an Intelsat link to the headends of UK cable networks.

BT will also use the earth station to supply substream services to customers in the Docklands area who cannot be readily accommodated by existing small dish antennae.

Within a year or two, BT would hope to expand their facilities to support a full range of business telecoms services on transatlantic and European links.

The Mercury earth station would be used to provide business services from the outset. High capacity links to North America via Intelsat V are planned for 1984 to be extended later to Europe and the Far East. The earth station would also function as a local distribution node, bringing Mercury's high capacity digital services into the heart of Docklands.

Initially, both earth station complexes will be connected to their respective carrier's trunk networks by microwave radio links. At a later stage microwave links will be replaced by high capacity cable. The Mercury facility would be linked directly

into the carrier's trunk network access node in Central London.

The pattern which emerges from this type of development has many features in common with the proposed New York Teleport development; large-scale satellite earth station facilities linked by high capacity cable to a major telecoms market and located in a low cost area with sufficient space to provide economical accommodation for the back office functions of major companies in the banking, insurance and information sectors.

## Joint venture

The New York Teleport, a joint venture project between the Port Authority of New York and Merrill Lynch, builds on this pattern to provide an integrated satellite communications centre/office park in which accommodation is specifically designed to meet the requirements of telecoms intensive industries such as broadcasters, cable programmers, financial institutions and data processors.

The area is already host to a number of high technology related organisations. A prime example is the £10m Limehouse Studio complex on the Isle of Dogs. Limehouse has been established to meet the programming demands of Channel 4, U.S. and UK cable and the video cassette and disc market.

Publishing organisations with a major presence in the area include News International, a major shareholder in Satellite Television and the Daily Telegraph which has recently agreed to build a new printing plant on the Isle of Dogs. One of Limehouse's major shareholders, Associated Newspapers is also considering a new printing plant in Docklands.

The Docklands area is also attracting the attention of alternative telecoms networks. For example, Channel 2000, a UK cable consortium, headed by Robin Hill of Merseyside Cablevision and David Donoghue, marketing director of Limehouse Studios and including U.S. telecoms company Western Union as the cable layer, has applied for an initial cable franchise for Tower Hamlets.

Michael Wiltshire

The modern exchange is starting to look and behave more like a computer. Jason Crisp explains

## More powerful role for PABX

THE ONCE-HUMBLE private automatic branch exchange (PABX)—is rapidly emerging as one of the most important elements in the electronic, automated office.

Where there were once a handful of manufacturers of PABXs, there are now dozens. And while the PABX market has been one of the strongest growth areas in the fast-growing field of telecommunications, there have already been a number of casualties.

One of the key indications of the changing role of the PABX has been the close relationships that have been formed between telecommunications manufacturers and computer companies this year:

- The most significant is International Business Machines (IBM), the world's largest computer group, and Rolm, a fast-growing Californian telecommunications group. In the summer, IBM bought a 15 per cent stake in Rolm for \$229m and an option to increase its stake up to 50 per cent. (IBM had, until that point, been working with Mitel of Canada to develop a range of office systems around its SX2000 exchange.)

- Rolm had already formed technical links with Digital Equipment, Johnson Controls and Hewlett-Packard to link various computers, terminals and building controls via its CBX family of digital exchanges.

- Honeywell, the U.S. computer and controls group, has set up a joint venture with LM

Ericsson, the leading Swedish telecommunications group, to develop products integrating voice and data communications.

- Joint technical agreements for inter-connection of PABXs and computer equipment between Northern Telecom and Hewlett-Packard, Data General, Digital Equipment and Sperry.

- ICL, the largest British-owned computer group, is to sell Mitel's new large digital PABX which will become an important part of its own move into office automation. Mitel also has a technical agreement with DEC to develop a PABX to computer interface.

## Breakthrough

The modern PABX is increasingly becoming to look and behave like a computer. The breakthrough came in the 1970s with the introduction of stored program control (SPC). The advantages of these exchanges—known as second generation PABXs—is that they were easy to configure through software changes and could give the

exchange many more features through its computer control. Many of these features, previously said as extra facilities, have become the standard facilities on a modern exchange. The exchanges themselves normally use analogue transmission—but some are digital—as their main function was to carry and switch voice traffic.

Most electronic exchanges in use are still second generation equipment. But a number of these exchanges have been substantially modified to improve their ability to handle data.

The so-called third generation PABX is digital and is designed to carry voice and data communications and can link a terminal with any computer. The advantage is that data can be carried without conversion into analogue. It means data communications on a site can be made via the already installed telephone lines.

One of the results of the liberalisation of the U.S. market, and the growing importance of the PABX, has meant a number of new companies have entered the field.

In the U.S., more than 20 companies are competing to supply PABX systems including AT&T, Northern Telecom, Mitel, Rolm, NEC, General Telephone and Electronics (GTE), Harris, ITT, Hitachi, Siemens, Ascom, and others.

developing the so-called fourth generation PABX which uses distributed processing and is a wideband switch.

Ideally, such a PABX is totally non-blocking (ie, all lines and extensions can be used at the same time) and it can be fully integrated with local area networks and packet-switched networks.

Two companies however have recently dropped out of the field after failing to make a significant impact on the U.S. market. Datapoint, which in 1981, announced an impressive (fourth generation) exchange which appeared to be able to integrate local area networks, recently withdrew from the market with negligible sales.

Wesscom, part of Rockwell, has also withdrawn from the market having sold about 200 systems.

Ironically, the Rockwell exchange is to be sold in the UK by Philips, the Dutch electrical group, which took out a licence before the U.S. group decided to pull out.

The difficulty of developing advanced digital exchanges is also shown by the fact Philips was unable to develop its own digital PABX in time to meet the comparatively slow liberalisation of the UK market.

Philips has adapted the Wesscom exchange for the British telecommunications system and is to continue to offer it in spite of Rockwell's withdrawal.

Mitel, the 10-year old Canadian group which has made a major impact in the U.S. and Europe with its low cost PABXs, has also suffered from development problems with its large digital PABX. The delays at Mitel became public because of agreements it had reached with IBM and ICL.

After working with Mitel for nearly a year, IBM pulled out of the joint relationship when it bought its equity stake in Rolm. Little secret was made of IBM's irritation at the delays in producing the SX2000.

## Limited form

Mitel now says the SX2000 will be produced in a limited form this Autumn for ICL, to install in the UK for technical approval. Full production is not expected until next spring with deliveries of the full system beginning after April in the U.S. and UK.

Mitel is not the only company to suffer problems developing a large digital exchange. Rolm itself was much later than originally intended with the large version of its CBX exchange.

The liberalisation of the UK market has attracted a number of suppliers of PABXs. Before the government's liberalisation took place the PABX market was arbitrarily divided into two.

British Telecom was the monopoly supplier of all exchanges of under 100 lines. It also permitted a limited number of companies to supply large PABXs direct including IBM, STC, GEC (a licensee of Northern Telecom's SL-1), Plessey (a licensee of Rolm's CBX) and Philips.

The suppliers of small PABXs to BT are Plessey and GEC with the Monarch, TMC, part of Philips, and STC with the Herald and Mitel with its SX20 and SX200.

As a result of liberalisation, a number of other manufacturers are entering the market. These include Plessey, with a new exchange IDK which it developed itself which is distributed by Rolm, STC, also with a new exchange developed by ITT, Harris, Ferranti-GTE, and AXI with the late Mitel SX2000.

Worldwide, the PABX market is likely to become tougher and margins will be squeezed as a result of the number of competitors in the field and the growing importance of the PABX as part of electronic office systems. And while companies previously sought to increase profitability on sales by offering additional software to give extra facilities a newer trend is to supply peripherals such as advanced workstations. Their sophistication can vary greatly from a microcomputer to a dumb terminal.

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British Aerospace is prime contractor for OLYMPUS family, the most powerful communications satellites yet, the first of which will be launched for the European Space Agency in 1986. British Aerospace is now well established as a world leader in the design, development and supply of communications satellites and their equipments. Apart from the prime contractor role in the ECS and MARECS programmes, British Aerospace is also supplying SKYNET 4 communications satellites for the United Kingdom Armed Forces and UNISAT satellites for the direct broadcast of two TV programmes to British homes from 1986 onwards. The company has also played increasingly important roles in Intelsat programmes and is currently the principal subcontractor for the Intelsat VI series of satellites.



## WORLD TELECOMMUNICATIONS XXVI

Raymond Snoddy looks at a fast-growing sector

## Data base services may grow by 20 p.c.

EARLIER this month an on-line data base specialising in the Middle East went live in London. On File has been set up by journalists, most of whom have been correspondents in the Middle East to provide what is claimed to be "the world's first electronically delivered interactive videotex system specialising in current commercial information on Third World markets."

For an annual subscription of £3,500, a client gets a view-data screen and hard copy printer, and unlimited access to information which ranges from the latest Middle East news headlines and profiles on decision makers, to business opportunities and "nitty gritty" details on such things as import/export regulations.

On File, which is backed financially by ICF, formerly the Industrial and Commercial Finance Corporation, is tiny now with six clients including British Petroleum and Merrett Syndicates, political risk underwriters.

Mr Steven de Winter, On File's managing director, and former foreign editor of NRC Handelsblad, the Dutch business newspaper, believes the break-even point of between 150-200 clients will be reached relatively quickly.

It is more, he says, than just a form of electronic newspaper. A profile of an organisation's information needs is taken at the outset and the client can use his receiver to ask for specific information he needs. Up to a full man-day of editorial effort per request is included in the subscription.

A few days before On File went live, the Financial Times and ITC Corporation, formerly International Telephone and Telegraph, announced their intention to collaborate to provide an electronic news alert system.

The joint venture will market information summarised from the pages of the FT and other leading sources of business information. Subscribers will call up the information through any communi-

cations terminal, personal computer, printer or telex terminal. In their different ways, both developments are illustrative of the rising interest, in the UK and the rest of Europe, as well as the U.S., in data bases—where information is held in digital form and updated by computer techniques.

Mr Graham Lee, managing director of Geosystems, and chairman of the 50-strong British Association of Database Producers, believes the interest is accelerating fast, particularly this year. For the first time small and medium companies are beginning to use data bases.

## Pricing problems

The very technology which makes the electronic dissemination of information financially viable in the first place—such as packet switching—is beginning to cause pricing problems for data base owners. So much information is moving so fast that charging by time connected to the data base is becoming inadequate.

Geosystems is now charging by the number of characters transmitted—between \$2-\$5, plus 50 cents communication charge for each thousand characters—which are of course counted by the computer.

Britain's tradition of publishing learned journals, the English language and London's importance as a financial centre have all encouraged the growth of the UK data base industry, Mr Lee believes.

"In terms of quality and value added we in Britain are world leaders," he believes.

Certainly, in Europe, Britain has become the number one supplier and the largest single data base market. A recent report on data base service in Europe by Frost and Sullivan, the international consultants, estimated the UK data base market last year to be worth \$235m. France and Germany each has \$150m worth of business, with Italy lagging at \$85m, and the rest of Europe sharing a further \$150m. Growth is expected to run at

more than 20 per cent a year up to 1987.

Data bases vary greatly both in the kind of information stored and how it is relayed to the client. The information for airline timetables and telephone directories, for example, is held on computer data bases but is then printed.

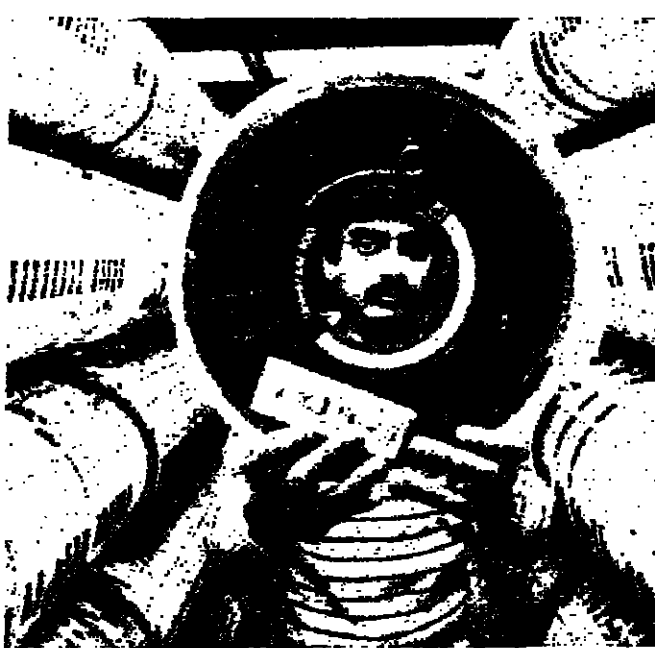
Market research organisations like A. C. Nielson and AGB Research use off-line methods of distribution. The continuous survey material often comes in the form of magnetic tape which can then be run on the client's own computer.

It is the on-line sector where the user is directly connected to the data base, often over a specially dedicated line, where the greatest growth has come. The provision of specialist financial and commercial information has taken Reuters to the top of the European data base league in terms of earnings, and made the international news agency record pre-tax profits of more than £36m last year. As expected stock market flotation could value the company at around £1bn.

Among Reuters financial services are the provision of money market dealing terminals which allow currency dealers to make contact in under four seconds, and negotiate and finalise deals on the screen.

On a smaller and more contemplative scale the success of Reuters has been matched by the rise of Datastream, the City of London-based company which offers clients the ability to carry out their own calculations.

Data is kept on 5,000 economic indicators for the leading Western economies. And clients can use Datastream desk top terminals to carry out their own analysis on such topics as stock market performance and portfolio valuation. Turnover in the year to June rose 23 per cent to £10.2m with on-line services, pre-tax profits of £2.34m took 40 per cent of the £757m European data base market in 1982 and this is expected to rise to 50 per cent by 1987.



## TOP 20 SUPPLIERS

TOP 20 SUPPLIERS OF DATA BASE SERVICES

By 1982 revenues (Europe, all sectors)

Rank	Supplier	Market share %	Rank	Supplier	Market share %
1	Reuters	17	11	DBI	1.1
2	A. C. Nielsen	15	12	GFK	1.0
3	Dun and Bradstreet	12	13	Derwent	0.9
4	AGB Research	5	14	IDM	0.8
5	Telekurs	3	15	CISI	0.8
6	VWD	3	16	L. P. Sharp	0.8
7	Extel	2	17	AP/Dow Jones	0.7
8	UAFT	2	18	Dialog	0.7
9	Datastream	2	19	SDC	0.5
10	Reed International	1.8	20	DAFSA/KOMPASS	0.5

Source: Frost and Sullivan

● Left: Some of the thousands of reels of magnetic tape stored at Baric Computing's complex at Feltham, Middlesex

## Ways of cutting phone bills

Geoffrey Charlish says more attention is now being given to new systems that can cut network costs

is a simple screen and keyboard task.

Until about 10 years ago, however, managements seldom knew which employees used their phones most and what the call destinations were.

Then companies such as Minster Automation, Interscan, Systems Reliability, Buzze, Pimney Bowes, Norex, Automatic Switching, Datapoint and others began to offer computer-based monitoring systems that could provide complete statistical data about the use of every extension on the exchange.

The early equipments were somewhat cumbersome and not always easy to use. Minster Automation's original "Tiger," for example, launched in 1972, used magnetic tape for storing the required data and was housed in 19 in racking.

The latest machines use microprocessors and compact disc stores and sit on a table top. Increasingly, monitoring facilities are being offered as an inbuilt facility in the latest

generation of electronic exchanges—the Plessey IDX for example.

These systems scan each of the extension lines at intervals of a few thousandths of a second so that if one is taken off the hook the system immediately registers the fact. It then records the number dialled, duration of the call, time of day, date and any other desired data, all of which is stored and can be manipulated into many kinds of presentation that can either be seen on a screen or printed out. The conversation itself is not, of course, recorded.

Optimisation of big private voice/data networks is a prime problem for company communications managers. According to Dr John Hunter, who looks after STC's own networks, the thorny problem lies in finding out just how an existing network is being used.

It is worth time and attention because over the years the network may have been expanded to suit needs which really no longer exist because the company has changed direction (as STC did on its divorce from ITC). Hunter thinks monitoring therefore has a more subtle

purpose than just finding out who is escalating the phone bills. If carried out at all the major locations with central collection of the data, it allows overall network traffic to be measured and decisions made about changes.

Several consultants (Pactel for example) offer services that ease three problems: how will the configuration, type, size and cost-effectiveness of a private network. But the future value of the result has to depend on the clarity of the communication manager's crystal ball.

Hunter, however, says that it is at least possible to decide on a design that will be insensitive to the future as possible.

Money can certainly be saved. Norwich Union Insurance, for example, which previously used the public switched network extensively, took the matter seriously in 1980 and commissioned Triphonic Rentals to link up the company's three dozen or so offices. Savings of the (then) £1.25m annual phone bill resulted. The network has five main switching centres connected by wide-band circuits and they radiate further connections to their surrounding regions.

As technology and liberalisation move on, more and more options open up. One is the inevitable convergence of voice and digital data on to the same transmission network and later, the same switching systems. So networks that are at the moment separate—voice, telex and data—will in the long term be implemented as a unified whole. But it cannot happen until digital working is extended by the world's PTTs into the whole network.

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Circuits

This is beginning to happen with BT's Kilostrum and Megastrum circuits in the UK, which companies are already buying, says Hunter, with a view to integrating voice and data.

Corresponding moves are happening in switching as well, of which perhaps the most notable was the introduction by Plessey of its IDX exchange in January.

This is a fully integrated digital switching system. It will allow voice, data, facsimile, videodata, teletext and telex to be handled, together with any future services that will come with the implementation of BT's integrated services digital network (ISDN), System X and Project Mercury.

The exchange is fully monitored, since Plessey sees network planning as "an area of key importance in the 1980s."

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## WORLD TELECOMMUNICATIONS XXVII

XXVII



Above: Motorola's Dyna portable radio-telephone; British Telecom's Hawk cordless telephone (left) is a boon to anyone with a phone who frequently needs to move around—such as Mr. Jeff Cook (seen here), of Walton Marine Sales of Walton Bridge, Surrey.  
The portable handset is a short-range radio receiver and transmitter, complete with dialling pad. It has a ringing tone and signal light for incoming calls.

## Wall St. holds its breath on AT&T divestiture bonanza

SOME TIME before the end of the year Wall Street is due to be given its first real chance to evaluate the new U.S. regional telephone companies formed out of the break-up of AT&T and the starting bell will have been sounded for the biggest share split in history.

However Wall Street's job of evaluating new regional companies will have been made considerably more difficult by the Federal Communication Commission's decision one week ago to change a crucial part of the divestiture formula.

The FCC created a new climate of confusion over the effects of the break-up on the regional companies, long-distance carriers and telephone users by announcing that it was postponing the introduction of "access charges" until at least April 3.

Wall Street has been working on the assumption that the seven regional companies would announce their planned first quarter dividend payable on May 1, 1984, issue pro forma financial statements and 1984 earnings estimates.

A few days later shares in

The new U.S. regional telephone companies formed out of the break up of AT & T are generating a new sub-industry in their evaluation, says

Paul Taylor

the new companies are due to begin trading on a when-issued basis. But the actual stock split is not due to take place until January, and many of the company's 3.2m shareholders will probably not receive their new share certificates until February at the earliest.

The basis of the share distribution scheme is that for every 10 old AT&T shares an investor will receive one share in the new AT&T and one in each of the seven new regional holding companies.

The share split itself is generating a whole sub-industry on Wall Street and elsewhere. The task of sending out the new shares is massive. With almost 1bn shares outstanding, one out of every 10 U.S. shareholders will be affected by the share split. Two-thirds of AT&T's 3.2m shareholders own fewer than 100 shares.

Shareholders will be faced with a number of difficult and complex choices following the share distribution — some related to the terms of the distribution itself.

A shareholder who owns fewer than ten AT&T shares at present will receive a cheque for the fractional shares of the regional companies. Salomon Brothers says about 17 per cent of all share accounts representing about 25m shares fall into this category.

Shareholders owning between 10 and 49 shares have three choices. They can take all their new shares and a cash payment for any fractional shares. They can deposit all the new shares, including fractional shares, in one of the regional company's dividend re-investment plans.

Finally they can arrange, through AT&T, to trade or consolidate the regional shares — for a fee of 25 cents per share traded — in one or more of the regional but not in AT&T itself until April 15.

About 77 per cent of share accounts representing 30 per cent of all shares outstanding fall into this group.

Shareholders with more than 500 shares will receive the new regional shares and cash for any fractional portion and can then either enroll some or all of the shares in a re-investment plan or buy or sell the shares through regular trading channels.

Small investors

However, there is now another alternative for all shareholders. Almost all the major Wall Street firms led initially by Merrill Lynch, have established so-called "lumpy dummy" funds.

Since a large proportion of AT&T's shares are held by small investors happy to accept

its better than average yield and steady but until last week, unexciting growth, Wall Street reasoned that these people tend to be cautious and conservative—ideal candidates for a variety of mutual funds designed to take over an individual's entire AT&T holding and manage it for him.

The primary advantages of such funds, as seen by the Wall Street firms, is that they minimise an otherwise cumbersome administrative task for the small investor while also maintaining the principal attraction of investment in AT&T—simplicity.

Instead of receiving 32 quarterly dividends and facing the problem of ploughing through eight annual reports the fund investor will simply swap his shares for units in the fund and receive 13 monthly payments.

An added attraction is that the scheme is tax free because it represents a swap but fund investors generally will have to pay a 1.5 per cent sales fee to the investment firm.

Many of the recently formed funds also offer additional frills including options to convert to managed broader-based telecommunications growth funds or to consolidate holdings around any of the eight companies—an important factor since most shareholders are expected to have strong preferences for one or more regionals.

For many the funds, which become operational next month, may simply offer a breathing space before taking the plunge and deciding which analyst's advice to follow.

In the meantime the telecommunications analysts on Wall Street are working overtime. Almost every Wall Street investment firm has produced, or is about to produce, a report attempting to evaluate the prospects for AT&T and the regionals after divestiture. Another bunch of reports is expected after the companies announce their dividends and earnings prospects.

## The seven regional companies

THE NEW regional companies: New York Telephone Company and New England Telephone and Telegraph Company, is one of the most profitable regional companies and has invested heavily in using new technology including optical fibre.

It has a stable but extremely wealthy population, is not expected to sell residential telephones, and is stressing that it will concentrate on picking the new businesses it will enter only on what it believes will provide the best return.

● Bell Atlantic: operating in another slow growth area Bell Atlantic has the lowest debt ratio for the system, the lowest average investment per access line, and among the fewest employees per line.

The company is planning an aggressive diversification strategy. Bell Atlantic says it is examining joint ventures, acquisitions, and new ventures that would complement its existing service. Last month the company announced an agreement with NEC to market its advanced Nexx 2400 PBX.

● Bell South: the largest of the seven regional companies and has the reputation for embracing new technology with "religious fervour." With the fastest growing population the company also has the highest return on equity and capital within the system.

The company plans to concentrate on "just meeting the demands for voice and data communications." It also boasts

the first commercial application of a videotex system in conjunction with Knight Rider newspapers in Florida.

● Ameritech: the company covers five states; it has the most consistent record among the regionals and the highest productivity. Ameritech is expected to be an aggressive participant in new business opportunities involving high technology—in part to offset the effects of the depressed midwest economy.

● Mr William Weiss, the chairman, says: "What our marketing plan tells us is that the future of our industry lies in the 'exotic services we can provide.' The five local telephone companies making up the region are expected to be in the forefront of cable TV link-ups and Ameritech earlier this month introduced the nation's first cellular mobile telephone service in Chicago.

● Southwestern Bell: the new regional company comprises just the one Bell operating company and is expected to experience the least disruption to its corporate structure. Another fast-growing region focused on Texas. Profits in the past have been limited by an unfavourable state regulatory environment although this is expected to improve.

Mr Zane Barnes, who was elected chairman at the inaugural meeting earlier this month, has said he intends to concentrate on the telephone business rather than diversifying. Southwestern will have yellow pages, mobile telephone

and a business equipment and residential telephone sales subsidiary.

● U.S. West: has the second highest number of lines served by electronic switching and is or is about to produce, a report return on equity over 11 per cent for all of the past six years. Its territory covers 45 per cent of the U.S., which means that it will lose a lot of long distance traffic but should gain a large volume of access charges.

The company which has already formed subsidiaries to provide mobile telephone services, yellow pages and for wiring and maintenance which may also team up with cable television companies and intends to push into unregulated business ventures.

● Pacific Telesis: has the largest operation in a single state—California, but has suffered in the past from rapid growth coupled with a difficult regulatory environment. As a result, it has been one of the least-profitable operating companies and will be spun off with a slightly higher debt to equity ratio.

The company is expected to be one of the quickest to diversify.

Mr Donald Guinn, the chairman, said recently: "It is our intention to have a whole array of separate business and profit centers."

Mr Guinn is also confident that the regulatory environment is improving.

Paul Taylor

## Experience Counts

Five years ago the Kingdom of Saudi Arabia launched an ambitious program to extend and improve its national telecommunications system.

Today, the objectives of the plan have been exceeded. The system has grown faster than any other national telecommunications network, while the quality of services has improved dramatically.

Recognizing that more than high-quality, ultra-modern equipment was needed, the Saudi Ministry of Post Telegraph and Telephone called upon Bell Canada's century of operating experience to organize, operate and manage the fast-growing system. Today, the system is as advanced as any in the world.

Bell Canada's experience has been gained in Canada and around the world. Founded just six years after Alexander Graham Bell invented the telephone, in Brantford, Canada, the company now operates more than 10 million telephones, and over its vast network move data and video signals as well as 14,000 million telephone conversations annually.

It serves large metropolitan centres, small towns and rural areas, from the peach-growing region of Southern Ontario to the ice-bound Arctic, over a territory larger than Western Europe.

**Bell Canada International**

In the international sphere, Bell Canada International has successfully completed contracts in more than 50 nations on five continents. In 1982, it was involved in 55 projects in 28 countries.

This consulting arm of the Bell Canada group of companies provides consulting and management services; undertakes turnkey projects; assists in the planning, organization, operation and maintenance of telecommunications systems, and provides training for telecommunications staff.

Bell Canada International's clients include both public and private telecommunications organizations, special common carriers and defence organizations.

Among the Arab nations, Bell Canada International has served Algeria, Iraq, Kuwait, Lebanon and Saudi Arabia. Currently it is providing modern digital switching systems, maintenance and training for Iraq. It is also involved in telecommunications developments in several African nations, in Trinidad, Colombia and Venezuela, and is providing expertise in digital technology for clients in Europe and the United States.

For many nations, Bell Canada International is the indispensable factor in the development of telecommunications systems.



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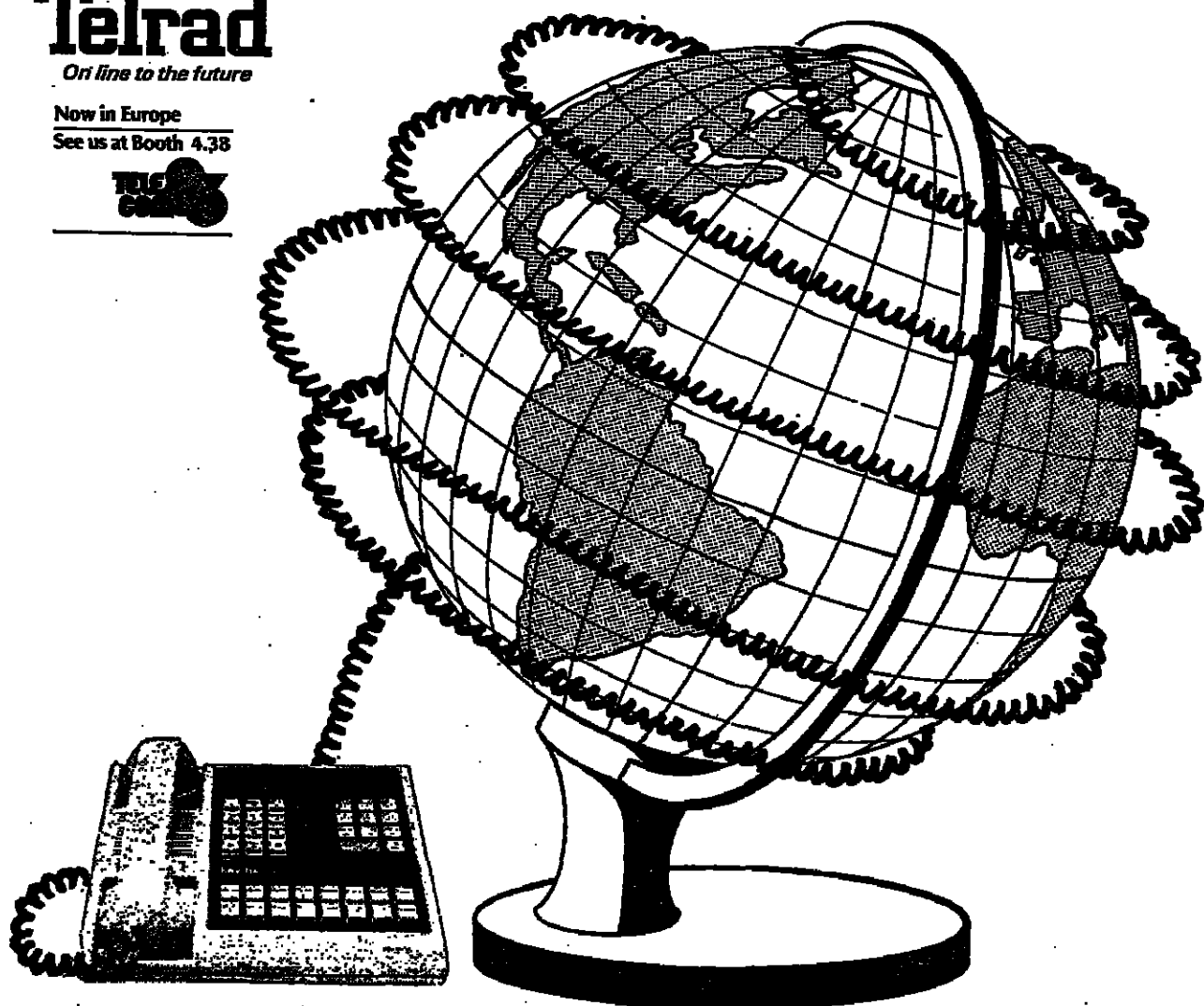
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## WORLD TELECOMMUNICATIONS XXVIII

The technology being installed is making possible services of a speed, capacity and reliability not seen before

## Pace of change for banks is quickening

CASH MAY be the lifeblood of the banking system, but the telecommunications lines which span the globe are its arteries.

Every working day, billions of pounds expressed in every currency imaginable, move between banks, their branches and their customers as a series of electronic pulses travelling along telephone lines.

And this is only the beginning. All the world's major banks are gearing up for a future in which the face they present to their customers will be simply a video screen in the customers' own office.

This screen—it could be a professional computer or a videodata television set—will allow customers to delve into the banks' own computers for the financial information and facilities they require.

The amounts of money the banks spend on telecommunications and data processing is enormous. In 1981, Chase Manhattan, admittedly one of the leaders in electronic banking, spent some \$300m on data processing. By 1983, the annual allocation was \$335m, a 67 per cent jump in two years, broken down as \$102m for development, \$38m for maintenance and enhancement and \$195m for the actual running of the system.

Ms Elaine Bond, senior vice-president at Chase for corporate systems said in London recently: "The specific areas being developed as part of Chase's major systems thrusts are united by a common theme: to ensure that our customers and employees throughout the world can access, exchange and manipulate data in the most cost effective way possible."

She went on: "The applications projects number in the hundreds—they include management information systems, electronic mail plus additional thrusts for plant modernisation such as the new treasury dealing room in London and our use of automatic teller machines."

"We are working on a global management information systems programme that will allow us to analyse data and provide information for management and regulatory reporting for commercial customers, agreements with them, commercial loans and other liabilities."

By ALAN CANE

It would be a mistake, however, to assume that the banks are relative newcomers to telecommunications. Telephone, telegraph and most important, telex, have long provided important communications channels for the banking community.

But the pace of change is quickening. Mr Philip Hughes, chairman of Logica, a prestigious UK-based systems company with extensive experience of financial data communications told a recent European Financial Marketing Association (EFMA) conference: "Of all the technological developments, the change in the communications environment is the most important for the banks."

"While the familiar fixed leased circuit networks of the banks will remain the mainstay of branch banking networks for some years to come, the advent of new technology and new services both between sites and within offices (local area networks) will lead to major changes."

"The first major change is the development of a variety of means of providing much higher bandwidth, that is greater capacity and higher speed between remote sites."

He went on to say: "Side by side with the provision of new high speed digital circuits by the telecommunications authori-

ties is the common aim in Europe to establish what they call an Integrated Services Digital Network (ISDN). This will allow for very high reliability, high speed switching of digital circuits between subscribers."

### Dramatic

So the technology is being slotted into place to make possible banking services of a speed, capacity and reliability not seen before. How will this affect existing services?

The most dramatic use of telecommunication by the world's banks in the last decade is arguably the emergence of SWIFT, the Society for Worldwide Interbank Financial Telecommunications. Neither bank nor telecommunications carrier, SWIFT links its members through specially designed data processing and networking equipment.

Its purpose is to provide automated international transaction processing and transmission services among and between member banks. In simple terms it is a set of common machinery and a set of agreed protocols which enable banks world-wide to send well defined messages among

themselves.

There are now some 900 member banks in 39 countries; peak traffic was recorded in December 1981 when on one day, 318,000 transactions were monitored.

Swift is not the only such mechanism, however. The major banks are installing their own global data communications networks of the sort that Elaine Bond has described. In New York, city clearing is handled by the CHIPS system; in London it will soon be the province of CHAPS.

Mr Carl Reuterskold, Swift general manager, is well aware of the apparent conflict: "One of the society's problems is that the international banking community tends sometimes to think of Swift in opposing ways: There are banks that accept the conception of Swift as being purely an international payments processing system."

"Although the processing and transmission of payments transactions certainly is the principle function of the system today, new initiatives have already moved Swift activities beyond the strict limits of the bank payments department.

"On the other side there are banks that adopt an excessively broad conception of Swift as being the ideal mechanism for resolving almost any imaginable international financial processing and telecommunications problem."

### Challenge

Mr Reuterskold argued that Swift must take the middle way: "The challenge for Swift is to seek and maintain a balance between different technological developments, changes in banking and financial requirements in different member banks and member countries and various development in private bank systems, national systems and emerging public systems."

The range of telecommunications-dependent systems being built by the banks ranges from the branch processing networks where a number of terminals or personal computers within a single branch are linked together and to the bank's headquarters machine to the massive systems established for world wide corporate cash management.

Corporate cash management

● Dish aerials sprouting over London and Los Angeles: in the City (left), overlooking St Paul's Cathedral, is one of the 80 Harris microwave antennae installed on the capital's rooftops under a £1m contract for British Telecom. The 19 GHz transmitter-

receivers are being used in BT's City Overlay Network for both telephone and computer data traffic. Above: a Harris microwave installation on top of the Crocker National Bank, overlooking the Los Angeles skyline.

computer. Each morning, with just the flick of a switch, the client can see at a glance his daily financial position with one or several banks.

"Previously, getting this information required reliance on time-sharing terminals, telephoning each bank individually then manually performing the calculations."

Telecommunications is also the key to personal banking for the retail customer whether through videodata-type systems where the domestic television set and domestic telephone are linked to a central computer file carrying details of the customer's account, or a domestic personal computer.

### Cashless society

In the U.S., Chemical Bank, well to the fore in home banking experiments, has now launched its system "Fronto" which uses domestic personal computers.

In Europe, a number of German banks including Deutsche Bank and Verbraucher Bank use a variation on videodata, as does the Nottingham Building Society in its trail blazing "Homelink" venture which is designed to pull home banking, home infor-

mation systems and home shopping together into one operation.

What is arousing most interest at present, however, in the UK at any rate, is the prospect for the installation of a nationwide electronic funds transfer system at the point of sale (EFT/POS)—the beginnings of the cashless society.

The clearing banks have now agreed to give the scheme their blessing: what remains to be decided is what form the system will take. There is no argument about the communication medium: it will be British Telecom's packet switched network, a way of moving computer data at very high speed and with high reliability by splitting it into small packets each individually addressed and transmitted.

What remains to be settled is who will pay for what, who will provide the retailer terminals and the equipment which allows access to the BT network.

These questions are expected to be settled soon: if the project proceeds as expected, the UK could have the first nationwide EFT/POS network in the world.

## Sirti and Pirelli contribute to the development of the Middle East

For the last 100 years, PIRELLI and SIRTÌ have made their own substantial contribution to the improvement of world communications. Not only are they proud of their role in the development of Italy's ultra-modern telecom system, but now their reputation is spreading overseas.

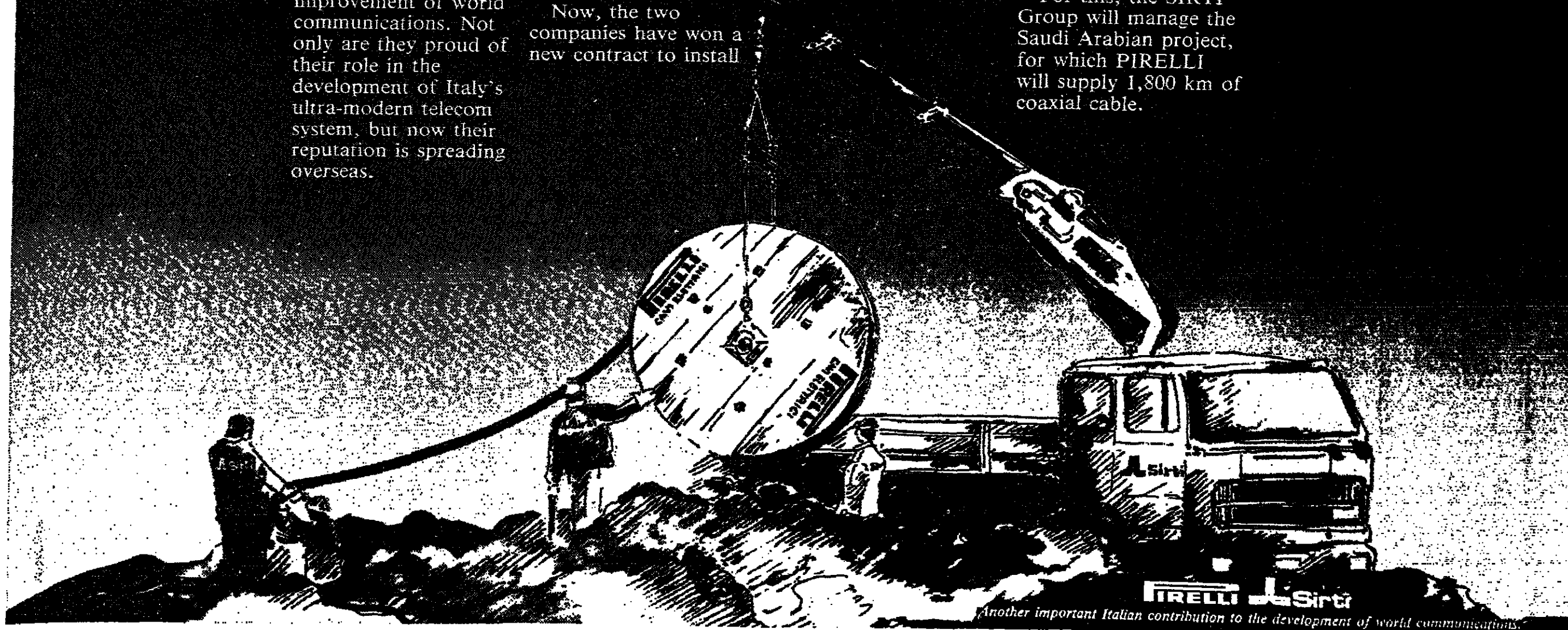
Today, SIRTÌ is installing a new telecom network in Libya, using PIRELLI coaxial cables.

Now, the two companies have won a new contract to install

an ultra-modern cable system in Saudi Arabia that will link its major cities and bring it closer to neighbouring

countries: a decisive contribution in improving Middle East communications.

For this, the SIRTÌ Group will manage the Saudi Arabian project, for which PIRELLI will supply 1,800 km of coaxial cable.



Another important Italian contribution to the development of world communications.